



KnowSeas

Knowledge-based Sustainable Management for Europe's Seas

Deliverable 2.2 - Managing Europe's Seas: A scoping study of issues, policies and actors

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June 2010

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1. INTRODUCTION

The rationale behind this deliverable was initially to examine at a relatively high level who the relevant stakeholders in relation to European marine management are, what issues they are concerned about and how those issues are addressed or translated into policy. After discussion among the partners involved in the deliverable, two additional elements were added:

- a case study of policy implementation in the UK; and
- a survey of the general public's views and values relating to marine environmental management.

The necessity to conduct a public survey became apparent during the scoping study because a clear impression of the general public's values in relation to the marine environment did not emerge through scrutiny of the existing literature. Consultation processes for European policy initiatives tended to address particular issues; moreover public responses were predominantly from a small number of member states and thus were not representative on a pan-European or regional sea scale.

Background

Marine environmental management in Europe's regional seas is going through a major policy renewal process. An Integrated Maritime Policy (IMP) was published in 2007; it attempts to regulate the activities of various marine sectors in a coherent way to protect Europe's marine environment and simultaneously to maximize the value of its uses. The 2008 Marine Strategy Framework Directive (MSFD) represents the environmental protection pillar of the IMP and as such can be considered to be nested within the IMP although there has been significant debate about the level of coherency of objectives between the IMP and MSFD (Juda 2007; Juda 2010; Wakefield 2010). The tension between economic development and environmental protection which is evident in the differing objectives of the IMP and MSFD is probably even more clear cut in the case of the Common Fisheries Policy (CFP) which is currently undergoing a reform process, with a new policy due to be in force for the start of 2012.

The MSFD in particular is dependent on integration of stakeholder views. The implementation of the Ecosystem Approach through the MSFD requires determination of quantitative targets for each of the eleven qualitative descriptors of Good Environmental Status (GENS) contained in Annex I of the directive. The scope of the descriptors is comprehensive and reflects both environmental and anthropogenic concerns. Many of the descriptors are interrelated and there is scope for conflict in achieving some of the descriptors simultaneously. As such, determination of targets for one descriptor may influence the levels of another descriptor. Thus the choice of targets will necessitate value judgements and trade-offs for the desired environmental status (Mee et al., 2008). In order to set appropriate and desirable target and to achieve GENS as defined in the MSFD it is therefore necessary to understand the differing viewpoints and expectations of different stakeholders in the marine environment.

All three of these policy initiatives (IMP, CFP and MSFD) have involved significant levels of stakeholder consultation (the IMP consultation involved 230 events and 490 submissions (European Commission 2007)). A large number of the submissions to these policy consultation processes come from what might be termed interest groups of one kind or another. An important question therefore is whether there is a democratic deficit (Hendriks 2009) within the consultation process i.e. Are the interests of the general public rather than of specific interest groups represented in policy?

We have analysed the submissions to the three consultative processes and other sources of information on marine environmental values in our scoping study. The analyses demonstrate that there are a wide range of values among individuals and stakeholder groups which are also reflected in the values inherent in European marine management policies. A recent paper on European fisheries (Wakefield 2009) highlighted the tension in values between policy instruments and concluded that *“Attention needs to be given to how EU fisheries policy is to acquire values beyond that of commercial extraction for immediate economic benefit so that it may cohere with objectives of the Integrated Maritime Policy and aid the regeneration of the seas.”*

The broad questions that the various elements of this deliverable attempt to address include:

- Who are the stakeholders concerned about policy making in European marine management?
- What issues are they concerned about?
- Specifically what concerns do the general public have and how well represented are their values in policies?
- How are European marine management policies implemented?

2. A SCOPING STUDY OF ISSUES, POLICIES AND ACTORS IN EUROPE'S SEAS

2.1 Objective

The scoping study set out to conduct an EU-wide scoping analysis of the coupled social and ecological systems that emerging EU policy proposes to address. This would be done on both a pan-European and regional sea scale. We were focused within the scoping study not on what the scientific understanding of marine management issues is but more on what the public's understanding is. The results from this scoping analysis would be useful outputs to inform other KnowSeas work packages including WP4 and WP5 and also the regional and sectoral case studies.

2.2 Methodology

The initial challenge for the deliverable team was in accessing information on the range of views and values relating to the management of Europe's regional seas. Information on relevant marine management policies at European and Regional Sea level was also sought. A shared online workspace was set up and an initial metadata compilation process was conducted. This process involved all of the deliverable team, members of the advisory board and a number of external contacts from bodies including ICES, the EEA, DG Mare, DG Environment, WWF, Natural England, OSPAR, HELCOM, Plan Bleu and the Black Sea Commission. The focus of this process was on documents that contained an element of stakeholder consultation and preferably public views on marine management issues. This metadata compilation exercise was a good example of the joint fact-finding process highlighted in the KnowSeas Description of Work (DoW).

We also decided to conduct detailed analyses of the recent consultation processes for the Marine Strategy Framework Directive, the Integrated Maritime Policy and the Common Fisheries Policy as they contained detailed submissions from both the public and interested stakeholder groups. For the MSFD, due to time constraints and access issues the analysis was limited to the online consultation process which followed an earlier workshop-based consultation phase. The IMP consultation process was likewise divided into two phases – prior to and following publication of a Green Paper on Future Maritime Policy. Our analysis covered submissions received prior to and following publication of the Green Paper. A representative sample of the submissions received for the Common Fisheries Policy Reform consultation was analysed. This sample was aimed at preserving the relative proportions of submissions from the various stakeholder interest groups.

The analysis of the documents was based on the descriptors of Good Environmental Status from the MSFD. We felt that this could add value to the process as it would highlight which descriptors were of most concern to stakeholders and also identify which descriptors were the site of conflict in relation to stakeholder values. We also added a number of additional categories which are not reflected in the MSFD GEnS descriptors list. Thus each document or consultation submission in the metadata table, in addition to being classed by stakeholder group and regional sea, was analysed in relation to the following categories:

- Biodiversity

- Invasive Species
- Commercial Species
- Food Web Elements
- Eutrophication
- Benthic Disturbance
- Hydrographic Disturbance
- Pollution
- Seafood Contamination
- Marine Litter
- Energy including Noise
- Climate Change Issues
- Marine Protected Area Issues
- Economic Issues
- Policy Issues

The results of this analysis were uploaded to the shared workspace and are compiled in the following section.

2.3 Results and Discussion

2.3.1 Who are the stakeholders?

In order to get an overview of relevant stakeholders in relation to the making of European marine management policies, we examined the distribution of responses to three major recent policy initiatives, namely IMP, CFP and MSFD (see Figure 1). This breakdown covers in excess of 1,000 submissions.

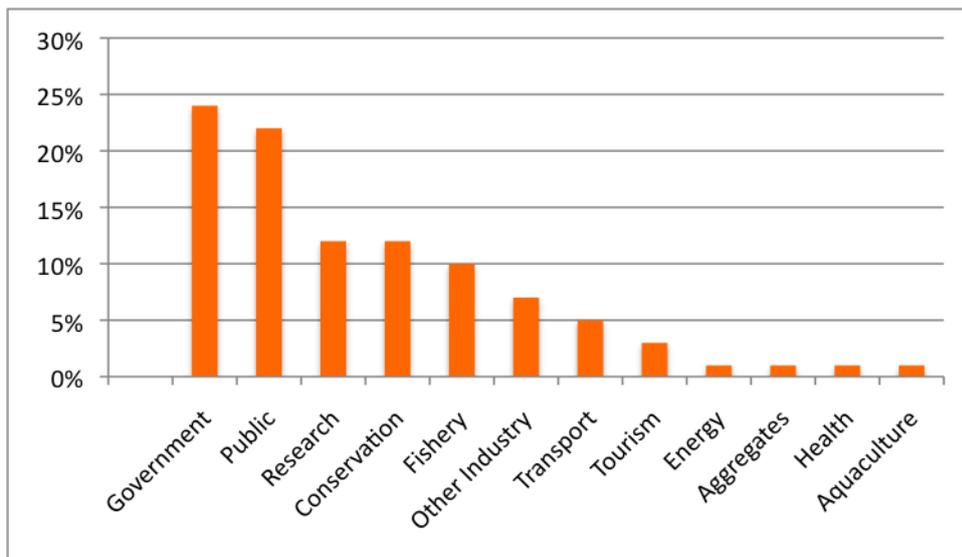


Figure 1: Breakdown by stakeholder sector of submissions to IMP, CFP and MSFD consultation processes.

It is to be expected that inclusion of the CFP would over-emphasise the importance of the fisheries sector. Figure 2 shows the sectoral breakdown for just the IMP and MSFD consultations and the proportion of fisheries submissions is as anticipated much lower. It is in fact, at 3%, probably even lower than expected for a sector which, notwithstanding the fact that the primary policy for fisheries is likely to remain the CFP, will be impacted by the IMP and MSFD. Another significant difference between Figure 1 and 2 is the lower figure for public responses when the CFP is removed from the analysis. This indicates that fisheries are an important issue for the public and in fact 30% of CFP reform submissions came from individuals.

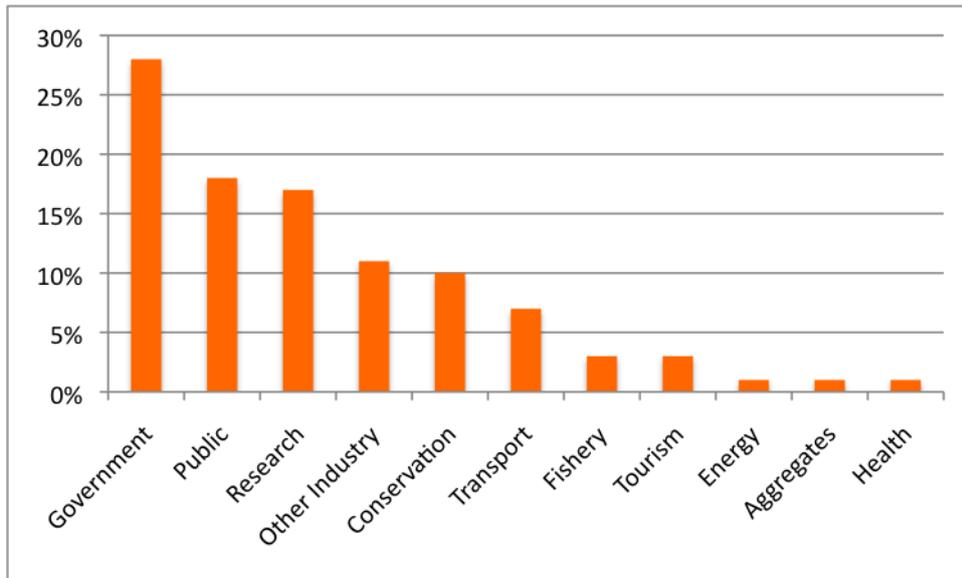


Figure 2: Breakdown by stakeholder sector of submissions to IMP and MSFD consultation processes.

Table 1 shows the sectoral breakdown for information sources analysed within the scoping study. The breakdown is generally consistent with that for the policy consultation submissions but with a somewhat higher representation from research, which is a function of our metadata compilation methodology i.e. it was created mainly by researchers.

Table 1: Breakdown by stakeholder sector of Scoping Study material.

Sectors	Contribution to scoping study
Industry, Aquaculture, Aggregates, Energy, Tourism and Transport	~ 15% altogether (individual sectors contribution < 5%)
Fisheries	~ 9%
Conservation	~ 18%
Government	~ 18%
Public	~ 19%
Research	~ 20%

In summary, from the general overview and the scoping study analyses it can be determined that in this context the stakeholders with the most input are coming from the government, public, research, conservation sector and fisheries sector.

2.3.2 What issues concern stakeholders?

It is clear from Figure 3 that certain issues such as commercial species, biodiversity and pollution are commonly addressed, indicating they cut across sectors and are not localised in a regional sea. Other concerns such as hydrographical disturbance, seafood contamination and marine litter are mentioned occasionally, pointing to more sector specific concerns. Part of the scoping study also included stakeholder contributions to the reformed CFP, which explains the high numbers of contributions addressing commercial species. However when the CFP contributions were taken out of the analysis the issue of commercial species still featured in over 20% of the contributions.

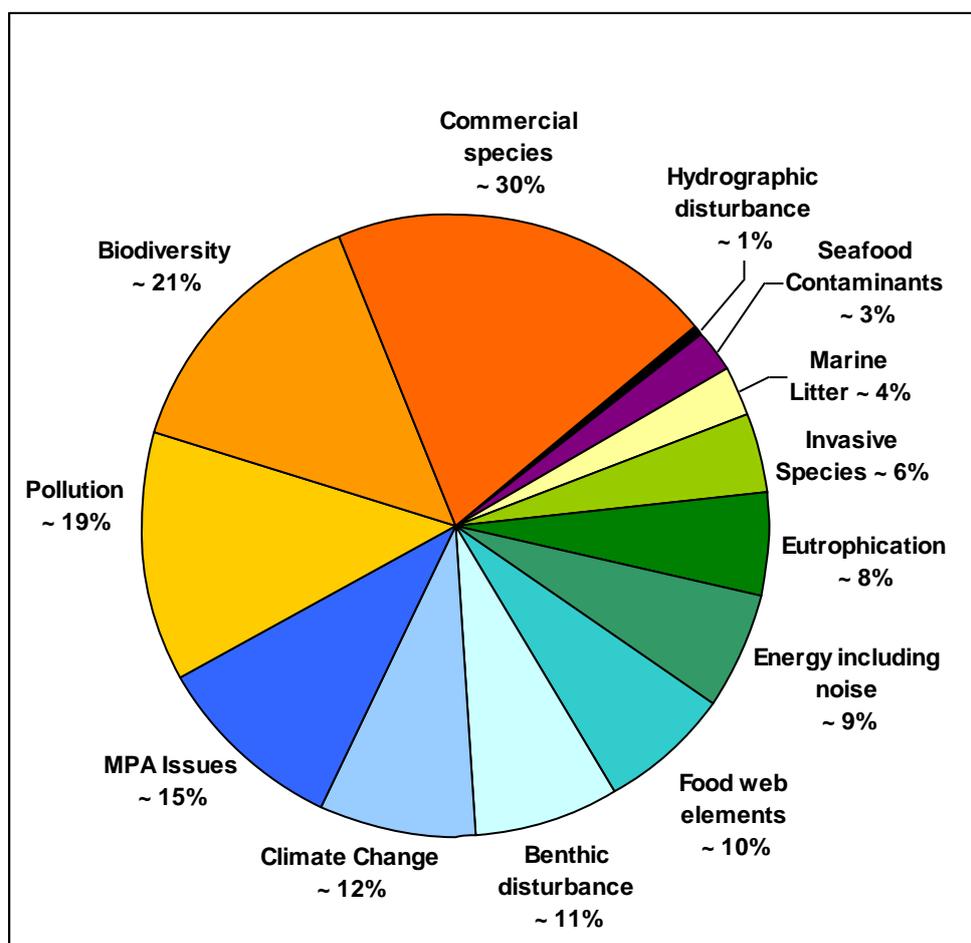


Figure 3: Overall distribution of issues addressed across all regional seas and stakeholder sectors.

Overall the most common issues addressed by stakeholders are commercial species, biodiversity, pollution and Marine Protected Areas (MPAs). To gain a better understanding of how the most commonly occurring issues are discussed and by whom we conducted a sectoral breakdown for individual issues.

Biodiversity

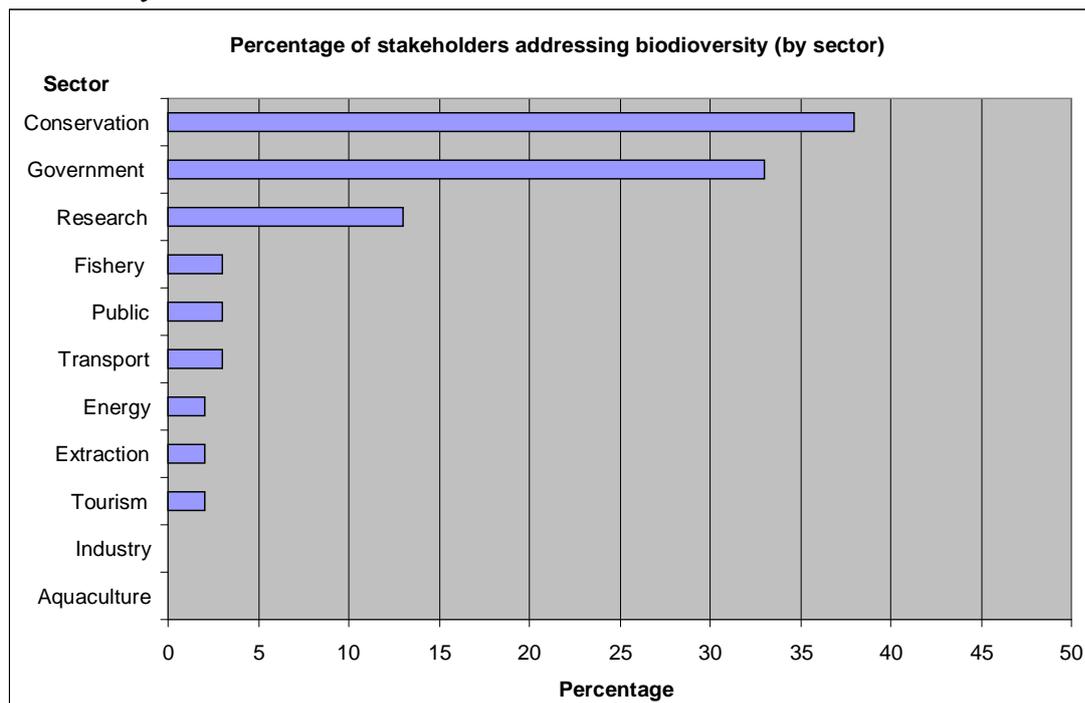


Figure 4: Percentage of documents addressing Biodiversity by sector.

Figure 4 demonstrates that biodiversity is only addressed to any great extent by three sectors; namely conservation, government and research. Together these amount to 85% of all contributions that address biodiversity indicating that this issue even though represented well in the overall study is very specific to certain interest groups. The analysis of the biodiversity issue highlights a wide gulf in values. What is particularly evident is the apparent priority gap between the government and public categories. Ostensibly the government are representing the public so why should there be such a pronounced mismatch?

Given that less than 5% of submissions mentioning biodiversity originate from the public it is something that should be explored within the third element of the scoping study – the public attitude survey. Is the concept of biodiversity well understood by the public? How significant is it that one of the MSFD’s descriptors of GEnS may not be a public priority? This finding is consistent with the 2007 Black Sea Trans-boundary Diagnostic Analysis, which showed higher prioritization of biodiversity among government officials than among members of the public. A summary is given below of the narratives on biodiversity which emerged from our qualitative analysis and which gives an insight into how different sectors address this issue. Such insight may be helpful when going into more detail in the public attitude survey.

Conservation Sector:

The conservation sector tends to address biodiversity in terms of management strategies and the need to implement goals that have been agreed in various policies such as good ecological status in the Water Framework Directive. However voices within the sector also highlight that due to current rates of biodiversity loss the 2012 goals for marine protection associated with the Convention on Biological Diversity will most likely not be achieved. In terms of regional contributions the Baltic Sea is highlighted in that to date only Germany has made any assessable contributions and Poland is the only country with designated areas to protect harbour porpoises, while no progress has been noted by any other Baltic States.

Research:

Research contributions referring to biodiversity tend to be more specific and often concentrate on a particular species e.g. Eelgrass *Zostera*. Another common topic within research submissions relates to ecosystem services in regional seas that are threatened. Overall it is recommended that existing expertise from this sector is utilised to address biodiversity loss in the coastal and marine environment.

Government:

Input from government institutions highlights the threats to marine biodiversity from fisheries by-catch, eutrophication and pollution. Biodiversity conservation is characterized as a factor that is in conflict with almost all other usage. Offshore wind farms are discussed in two ways:

- in terms of potential positive effects e.g. potential areas of fish havens or in relation to designs which can enhance or at a minimum maintain marine habitats; and
- in terms of the potential long term negative effects that such structures may have on distribution, composition and diversity of fish populations and all other communities (e.g. birds, marine mammals) in the vicinity of these structures.

Regional contributions from this sector highlight the Baltic Sea again, which is deemed very vulnerable in terms of alien species impacts on diversity as this system is already lower in species diversity than other regional seas. Here the strategic goals are mentioned which were strongly articulated by the conservation sector in reference to favourable conservation status of the Baltic Sea biodiversity. Species such as the Monk Seal in the Mediterranean and Black Sea Dolphin are highlighted for the respective regional seas contributions from this sector.

Tourism:

Although biodiversity is not a main priority for this sector, the benefits of integrated biodiversity conservation programs involving recreation which would be supported also by the conservation sector were highlighted.

Fisheries:

Again biodiversity is not a main priority for this sector but the impact of finfish farming on wild fish stocks was addressed under the biodiversity issue.

Pollution

There is no obvious priority split on the issue of pollution as there was for biodiversity. It is an important issue for a greater number of sectors, however transport as one of the sectors with a lower percentage of contributions (see Table 1) to this scoping study emerged with a

relatively high interest in this topic. A summary is given below of the narratives on pollution which emerged from our analysis and which give an insight into how different sectors address this issue.

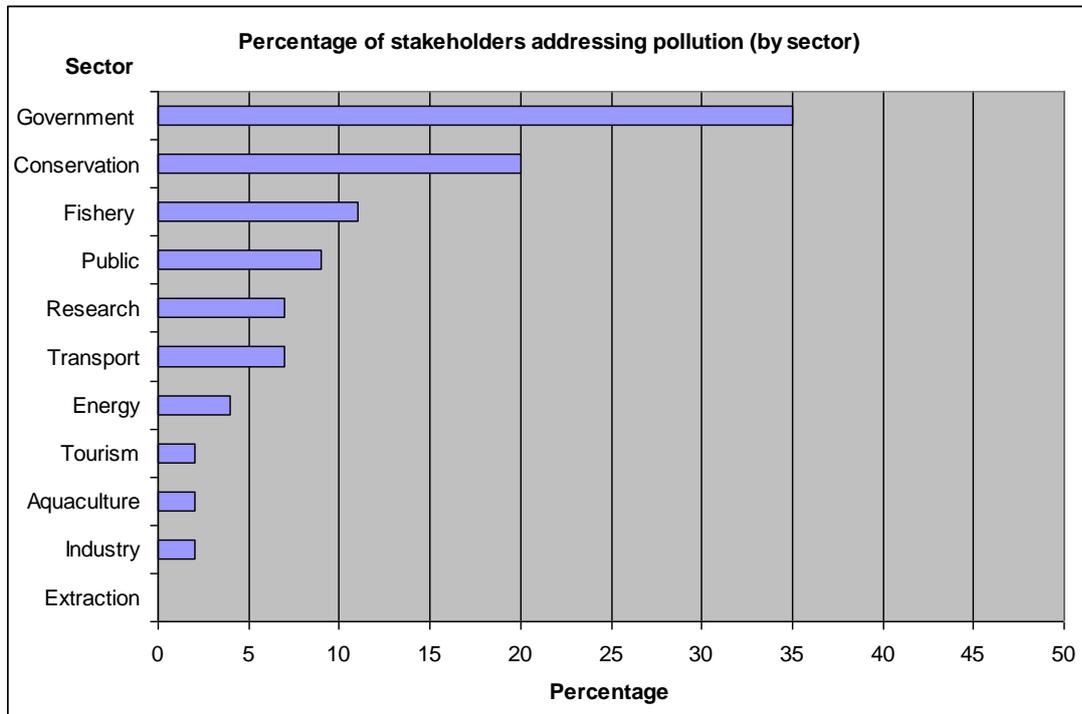


Figure 5: Percentage of documents addressing Pollution by sector.

Aquaculture:

Agricultural runoff, urban pollution and discharge of herbicides and pesticides into the seas are highlighted as important sources of pollution impacting on aquaculture.

Conservation:

The sector stresses that all human-induced threats, especially pollution from land-based sources, need increased attention. Impacts from uncontrolled tourism numbers as well as oil discharges from shipping operations and accidents were emphasised.

Energy:

The capacity for new technologies to improve oil spill response was stressed. The sector also highlights wind power as an option to reduce pollution and resulting climate change impact from sources of energy as a cost effective renewable energy.

Fisheries:

Attention is drawn to the contribution of activities other than fisheries, in particular land based pollution sources and noise pollution.

Government:

In common with government derived submissions on other topics the scope is wide ranging and covers multiple sources of pollutants e.g. waste dumping, oil, heavy metals, TBT, PCBs,

PAHs, Dioxins, POPs, pesticides, radioactive contamination from nuclear-fuel reprocessing plants and air pollution from ships. Generally measures to deal with these are in place but require improvement. New sources of potential accidents at sea with associated pollution risks are highlighted such as ships colliding with wind turbines. In terms of regional seas the Baltic Sea countries are highlighted in terms of nutrient reduction programs, which seem have long term impacts but are not as effective on the short term.

Industry:

Risk analyses from major historic pollution incidents (e.g. Exxon Valdez) have led to implementation of improvement measures and good response models.

Research:

The Baltic Sea is again emphasised in relation to this issue in terms of agricultural run-off problems and heavy metal concentrations that are still up to five times higher than in the North Atlantic. The risk of pollution from oil spills is increased due to increased maritime traffic and oil transport.

Tourism:

The sector calls for research and data to confirm its assumption that recreational marine activities (e.g. boating and marina related activities) are not the main polluters of the marine environment.

Transport:

The sector highlights the importance of ports especially in terms of safe transport of dangerous goods and discusses a “green bunkering” system that requires an oil boom at every bunker, which could be regulated by port by-laws. Activities aimed at monitoring GENs could gather information on accidents and pollution that could be utilised and feed into recommendations and directives.

Commercial Species

Figure 6 demonstrates that concerns in relation to commercial species are cross sectoral. As mentioned earlier the proportion of public submissions to the CFP Reform consultation were higher than for the other policy instruments, highlighting the level of public concern with this issue. The fact that the government category occurs as one of the two main contributors across all four of our selected issues indicates unsurprisingly that this sector keeps a watching brief across a wide range of issues while other categories, e.g. fisheries, are more specific in relation to their priority issues. A summary is given below of the narratives on commercial species which emerged from our analysis and which give an insight into how different sectors address this issue.

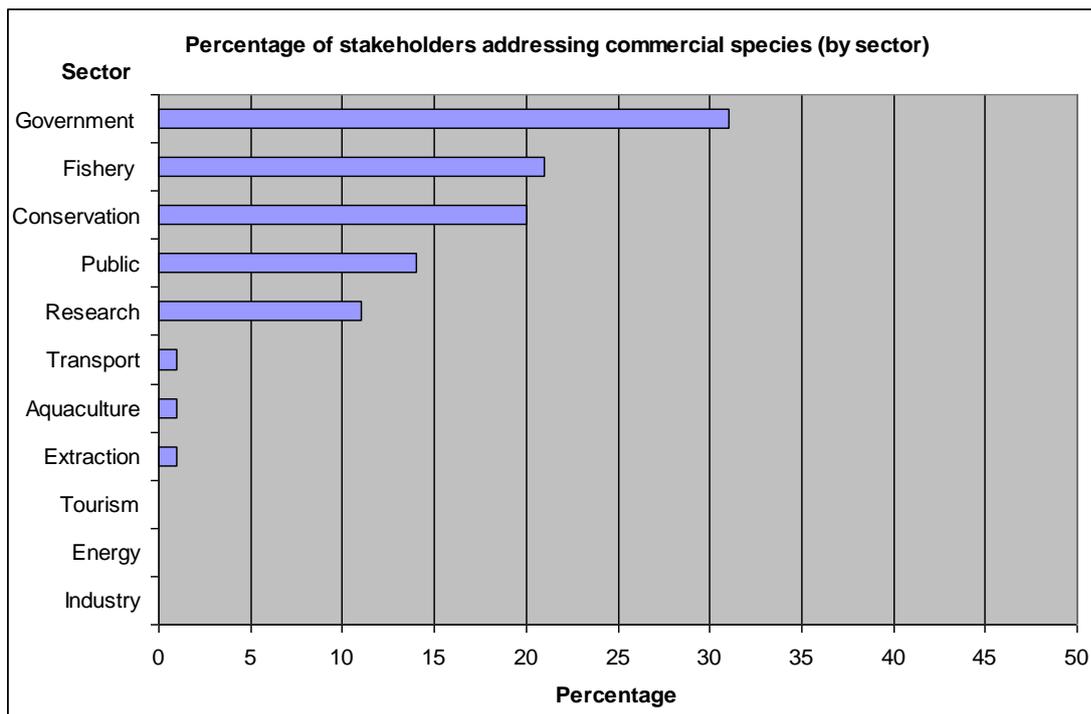


Figure 6: Percentage of documents addressing Commercial Species by sector.

Conservation:

The sector places the emphasis on safe biological limits, with associated fishing bans if limits are exceeded, and the establishment of no-take-zones. Contributions from the sector generally support the view that politicians back short-term industry (commercial) interests despite evidence of stocks being threatened e.g. cod.

Fisheries:

The sector supports an integrated maritime policy as it feels that the impact of other factors on fisheries will be accounted for and a more realistic view will be taken on fish stock levels. The impact of aquaculture on fish stocks requires attention and fishermen feel that increased abundance of fish predators such as grey seals are impacting on stock levels.

Government:

Safe biological limits are highlighted as well as the threat of overfishing and by-catch. Furthermore the impact of ghost fisheries is emphasized and aquaculture is promoted as a

sector with potential for growth, which is contradictory to the contributions from the fisheries sector which highlighted negative impacts. In terms of regional contributions, the Black Sea features in relation to collapse of commercial fish stocks due to the impacts of invasive species, illegal fishing and overfishing.

Public:

Importance is given to more sustainable modes of exploitation of commercial species while acknowledging that many resources are unexploited or of unknown status. There is an associated desire for an improved knowledge base on which to base sustainable exploitation.

Research:

The sector predominantly highlights the unsustainability of current fisheries resource extraction rates. In terms of regional contributions the Baltic Sea Action Plan launched in 1997 is mentioned and its failure in its objective to foster recovery of wild salmon.

Marine Protected Areas

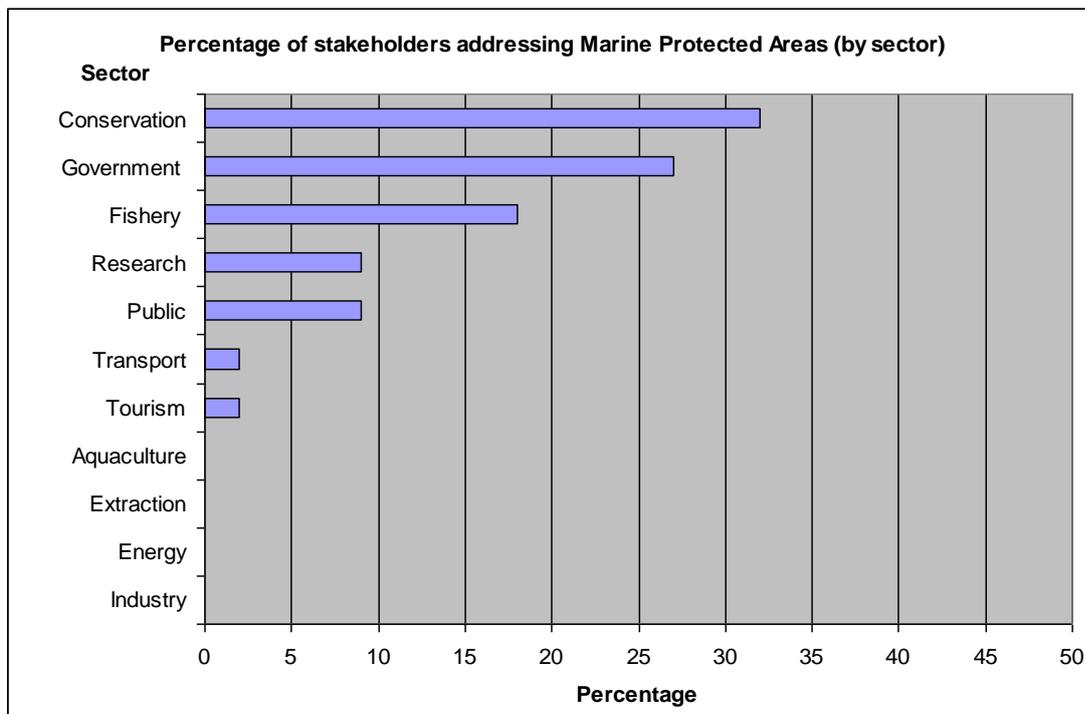


Figure 7: Percentage of documents addressing Marine Protected Areas by sector.

Marine Protected Areas (MPAs) had been included in the scoping study as an additional category and have shown to be one of the most common topics addressed by stakeholder contributions examined in this scoping study (see Figure 3). Figure 7 shows that MPAs are addressed by all the sectors that have a relatively high number of contributions to this scoping study (see Table 1) indicating that MPAs are a relatively cross sectoral topic. The status of MPAs is also reflected when analysing regional contributions in relation to most common issues (see Figures 8, 9 and 10). Consideration should be given to examining attitudes towards MPAs further in the public attitude survey.

Issues within Regional Seas

Contributions on issues from regional stakeholder submissions specific to the North East Atlantic, the Baltic Sea and the Mediterranean have been analysed in order to establish any regional-specific issues that could be explored further in the public attitude survey. Unfortunately there were not enough contributions specific to the Black Sea to make a meaningful analysis, however some individual concerns had been captured through the qualitative survey e.g. biodiversity concerns specifically mentioning Black Sea dolphin and in terms of commercial species the collapse of commercial fish stocks due to the impacts of invasive species, illegal fishing and overfishing.

The North East Atlantic

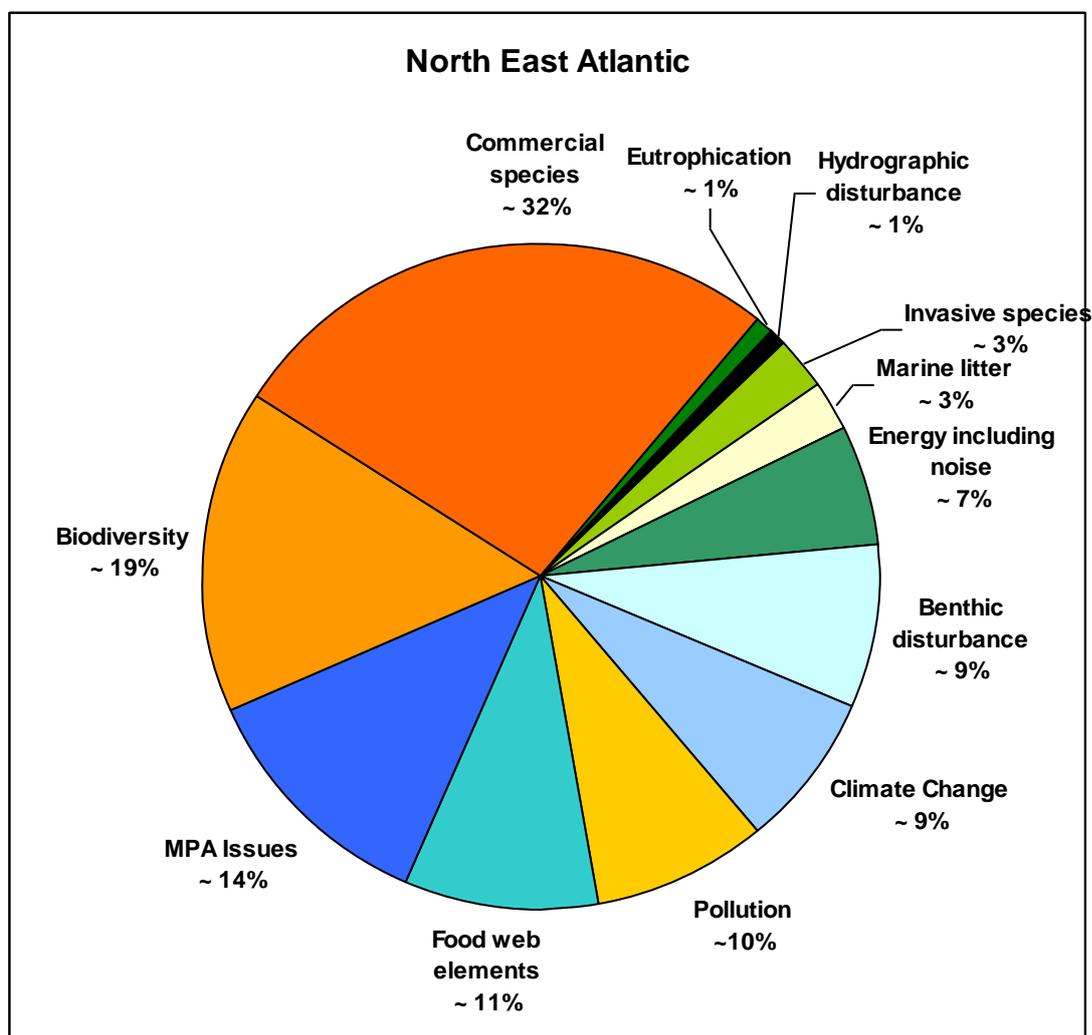


Figure 8: Issues in North East Atlantic

The relative importance of issues in the North East Atlantic is almost identical to that for all European seas (see Figure 3) with the exception of pollution. Pollution in other areas is ranked higher in importance than in the NE Atlantic (see Figure 8) which may be expected given that it is a much more open marine system than all of the other Regional Seas. The

similarity to the general distribution is related to the relative contribution from this Regional Sea to the overall analysis.

The Baltic Sea

Figure 9 shows some distinct regional priorities in the Baltic Sea relative to the overall distribution. While eutrophication at a pan European level occurs in only 8% of sources, in the Baltic it registers in 25%. Pollution also ranks slightly higher in the Baltic (21%) than at pan-European level (19%).

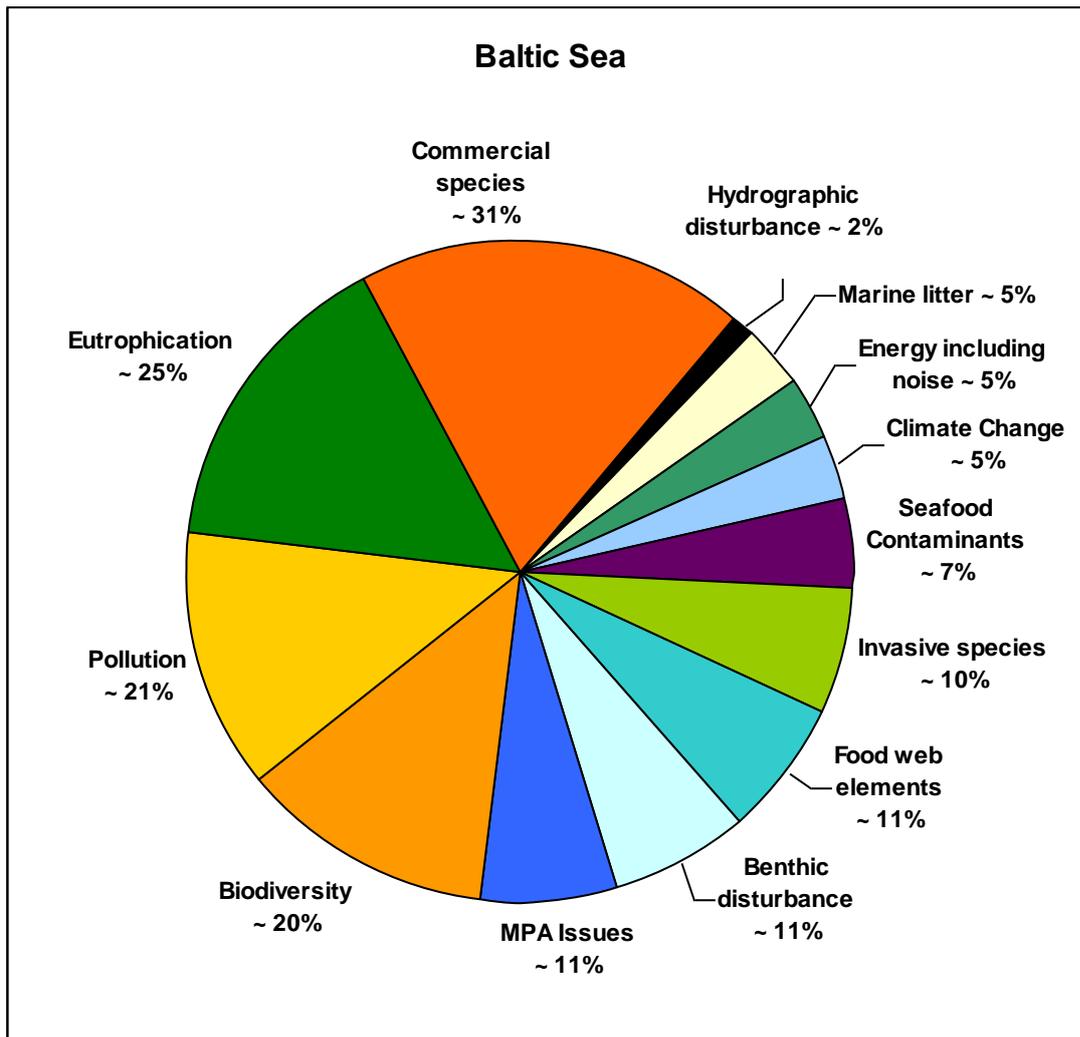


Figure 9: Issues in the Baltic Sea

The Mediterranean Sea

The distribution of issues in the Mediterranean (see Figure 10) reflects to a large degree the overall trend (see Figure 3). The main differences are that the issues of Marine Litter (12% compared to 5% overall) and Food web elements (19% compared to 10% overall) are represented more strongly.

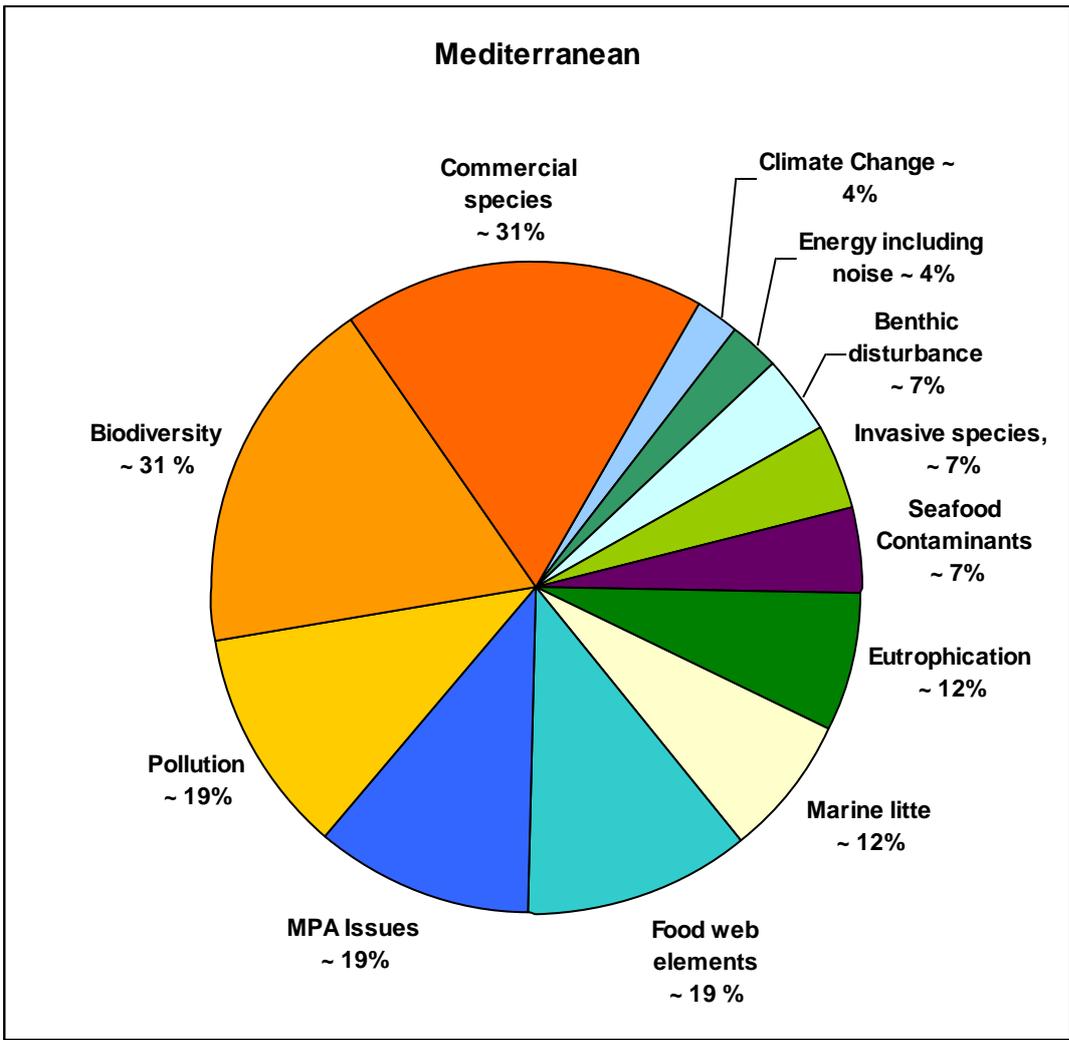


Figure 10: Issues in the Mediterranean

3 CASE STUDY ON EU POLICY IMPLEMENTATION (MSFD AND WFD) USING “RAPID POLICY NETWORK ANALYSIS”

3.1 Introduction

The result of this study is the mapping of policy relationships for a number of European policy instruments. It develops a methodology for mapping policy and applies this to a case study in the United Kingdom (UK).

Policy Network Analysis, which is a form of Social Network Analysis, can be used to understand policy development, but has complex outputs and requires dedicated skills in its application. It was necessary to develop a new approach which did not require previous knowledge or facility with Policy Network Analysis tools and which would deliver practical outputs for non-technical users. In order to test the method it was used in case studies of UK policy implementation, namely the Marine Strategy Framework Directive (MSFD) and the Water Framework Directive (WFD), for a number of reasons:

1. The KnowSeas project seeks to assist and advise on the future sustainable use of Europe’s Seas and as such the two Directives are relevant.
2. Whilst the WFD is predominantly focussed on land-based good environmental status of European waters, it has an influence on the quality of marine waters around the coast of Member States.
3. It will be critical that the two Directives work synergistically if the coastal zone is to be sufficiently protected. Failure in implementing either Directive can have significant impacts on the success of the other.
4. The WFD has now been implemented at a local level in the UK, whereas the MSFD is still in the relatively early stages of development.
5. Marine Spatial Planning is a developing discipline and there may be opportunities for planners to benefit from a transfer of knowledge and experience from the implementation of the WFD in the transposition of the MSFD.

Definitions

The vocabulary used in the policy arena can be ambiguous depending on the context. For this report the following definitions are applied:

1. ‘Stakeholder’ refers to any individual or entity having an active interest in the policy process.
2. ‘Actor’ refers to any individual or entity in the policy process that is institutionally both formally or informally linked and able to affect its outcome.
3. ‘Instrument’ refers to agreements, processes, actions etc. in the policy process which are endorsed by the policy actors as being integral to the delivery of the policy objectives. These include: instruments of policy and legislation, statutory instruments, ‘*relevant programmes*’ and strategies.
4. ‘Domain’ refers to a policy community of actors or instruments operating at a geographical level, i.e. International, EU, UK, UK Devolved Authority or local/sub-national.

Background

Policy Network Analysis is a growing discipline and is becoming popular as a tool within the social sciences. It can provide an insight into the balance of responsibility, accountability, authority, resources, relationships and power in a policy process. According to Peterson (2003), modern democratic policy making is experiencing a trend towards governance and an increasingly diverse range of governmental, private and non-governmental actors are becoming engaged in the policy process. Traditional, rigid hierarchical government approaches are struggling to be responsive and effective and so policy networks are forming as an integral component of the process of government (Besussi 2006).

A policy network is the congregation of interdependent governmental and non-governmental actors who share interests in public policy development and are '*institutionally either formally or informally linked*' (Rhodes 2010). These interdependent linkages exist in lasting patterns of relationships between actors and represent a flow of resources which provide opportunities or constraints. Actors would typically expect to be able to influence the outcomes of policy through their interactions with other actors in the policy network.

Actors within a policy network are assumed to share similar goals forming a '*policy community*', whereas an '*issue community*' is defined as an often changing group of diverse actors with disparate opinions and goals who are brought together by an '*issue*' (Kirst, *et al* 1984). For example; whilst public consultation invites open comment and feedback, many individuals and organisations are only temporarily involved, e.g. newspapers, and are never institutionally engaged. The life cycle of the policy process requires, and attracts, different actors at different stages and so the policy community and the level of engagement changes over time. The more complex a policy, and the more complex the interactions between actors, the greater the likelihood of implementation failure (Friedman 2006).

The Policy Context

The international community is responding to a range of threats to the marine environment, including climate change, pollution, over-fishing and the rapid growth in coastal populations. A range of agreements and directives have been developed in an effort to halt and reverse the declines in the health of marine ecosystems. Many of these agreements can be traced back to the United Nations Convention on the Law of the Seas which established the sovereignty of Coastal States, and their responsibility for ocean resources (UN 2009). In 1992, agreements made at the Rio Earth Summit, including Agenda 21 and the Convention on Biological Diversity Treaty gave additional direction to marine policy. Principles including the 'precautionary approach' and 'polluter pays', were established as part of the Rio Declarations and have had far reaching consequences on the development of environmental policy.

International policy making seeks the common agreement of contracting parties and often requires negotiation and compromise of State objectives, particularly where there are transboundary implications. According to Hooghe and Marks (2001): "*International decision rules are generally less formally institutionalised, and so there is usually more space for political dynamics to shape the outcome.*" They also propose that in the EU there is a '*dispersal of authority*' at many levels and a movement towards multi-level governance, as authority migrates supra, and sub-nationally. This view is supported by recent developments

in amendments to the European Union and European Community treaties following the coming into force of the Treaty of Lisbon in December 2009 (EU Europa 2010). The Lisbon Treaty calls for increased transparency in the democratic process, ‘*clearer categorisation of competencies*’ and ‘*a stronger voice for citizens*’ (EU Europa 2009) and adopts the principle of co-decision which obliges agreement between the European Parliament and Council before legislation can be adopted.

As concerns the marine environment, in 2007, the Commission to the European Parliament released its vision for the future management of EU waters in a ‘*Blue Book*’ (EU Commission 2007) and this was followed in 2009 by an ‘*Integrated Maritime Policy*’ progress report which established six future strategic policy directions. The first of these directions call for the ‘*integration of maritime governance*’ to ensure policy integration and the creation of cross-sector management structures (European Commission 2009).

The Water Framework and Marine Strategy Framework Directives

Several Directives have dominated the development of marine legislation and strategies by Member States. In terms of coastal and marine management, the Water Framework Directive 2000/60/EC (EU 2000) and the Marine Strategy Framework Directive 2008/56/EC (EU 2008) are key policies.

The Water Framework Directive (WFD) aims to recover and protect the environmental status of (terrestrial) ground and surface waters and coastal waters to a distance of 1 nautical mile from the coast. Its key aims include:

1. The expansion of the protection of water to include all ground and surface waters and to ensure ‘good status’ by agreed deadlines;
2. The management of water resources based on river basins;
3. To develop a combined approach to emission limits and quality standards.

In the UK, this has resulted in the creation of eleven River Basin Management Districts in England and Wales and two in Scotland each with dedicated River Basin Management Plans. The transposition and implementation of the WFD was mostly delegated to the devolved authorities and their representative organisations.

The Marine Strategy Framework Directive (MSFD) is a more recent initiative which is in the early stages of implementation by Member States and covers an area from the baseline from which territorial waters are measured to the limit of a Member State’s jurisdiction. Its key aims are to deliver (see Appendix 1):

1. ‘*Good Environmental Status*’ by 2020;
2. An assessment of the current state of (their) seas;
3. A description, including the associated targets of Good Environmental Status (GENS) by July 2012;
4. Establishment of a monitoring programme to measure GENS progress by July 2014;
5. A programme of measures by 2016 (Scottish Government 2009).

The MSFD also includes a responsibility to protect ‘*...aspects of the environmental status of the marine environment... not already addressed through Directive 2000/60/EC*’ (the WFD). The current proposal for the implementation of the MSFD is to develop a single UK Marine Strategy with delegated implementation. The UK government is proposing that OSPAR will

be ‘...the main forum through which the UK will engage in the regional level coordination required by the Directive’.

The sensitive integration of these two Directives is important to ensure the seamless protection of the marine environment, particularly in the coastal zone.

Development of Rapid Policy Network Mapping

The need for simplicity in the output for the KnowSeas project led to the development of a Policy Network Analysis ‘light’ model, described here as ‘*Rapid Policy Network Mapping*’. This Actor-Instrument policy analysis model has a number of interesting possibilities in assessing the process of policy development and draws on existing policy and network analysis theory and practice in its development and application.

The development of the Rapid Policy Network Mapping model adapted the ‘snowball method’ of policy network analysis which applies an actor-initiated sampling strategy based on referrals (Farquharson 2003 and Kowald *et al* 2009). This process of investigation emulates the way a social network develops based on referrals and invitations. Data on actors and instruments was collected using a ‘*focussed synthesis*’ approach that differs from a traditional academic literature review in that it is not limited to peer-reviewed literature and uses sources including governmental websites, policy and legislative instruments and planning documents.

In practical terms research started using the websites of the Scottish Government, the Department for Environment, Food and Rural Affairs and the UK Environment Agency. Based on referrals and citations from this point, information on subsequent actors and instruments was simultaneously captured and analysed until it stopped uncovering actors or instruments with a direct relevance to the respective Directives. The information collected included actor responsibility, accountability and authority in relation to the policy process as a function of their policy domains. Actors were linked to an activity in the policy lifecycle. Their roles were categorised in terms of responsibility to either deliver an output, to advise/influence, to make decisions or as ‘owners’ of a policy process or policy instrument. Once all avenues of referral were exhausted the data was used to build a series of policy actor and instrument maps.

Following the first case study a series of templates were developed based on the policy lifecycle, i.e. creation, interpretation, transposition, implementation (Figure 11). Inter-dependencies and inter-relationships of actors and instruments were assessed and recorded.

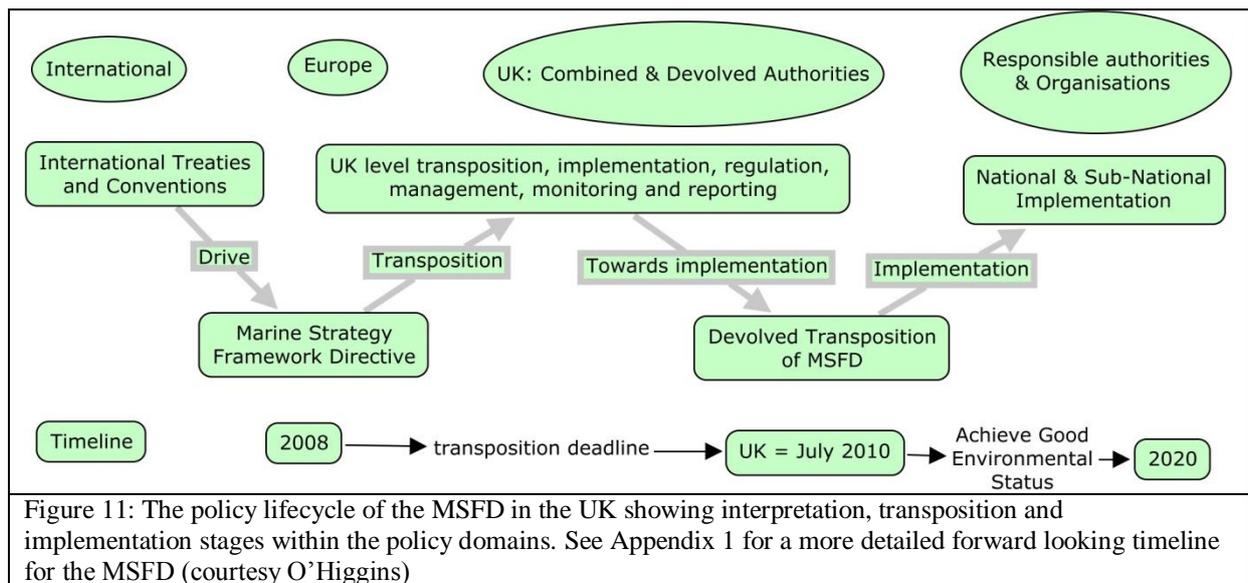


Figure 11: The policy lifecycle of the MSFD in the UK showing interpretation, transposition and implementation stages within the policy domains. See Appendix 1 for a more detailed forward looking timeline for the MSFD (courtesy O’Higgins)

Defining the roles of actors

The need to define the attributes of the policy actors and the categories of policy instruments and to consolidate these in a limited number of definitions was recognised early in the design process.

Actor Definitions

Four categories of actor were determined and these are divided into two main types: those with, and those without, responsibility to deliver a formal action or process. They are defined as follows:

A. No delivery responsibility

1. Influencer:

An organisation, entity or individual which is legally, morally or practically required, invited or obliged to be involved in the official policy development process. This does not include organisations, entities or individuals responding to a public consultation process, or similar, if they are not legally, morally or practically required, invited or obliged to be engaged in the official policy development process. It is assumed that Influencers can affect the outcome of the policy process using legitimate means based on their opinions and views.

B. Delivery responsibility

1. Owner/Decision Maker:

An organisation, entity or individual which has the authority to make a *decision* which can affect the policy outcome as concerns intellectual or practical components or which *owns* all, or component parts, of the policy development process within a specified boundary. The majority of these actors are responsible and accountable for the delivery of objectives which may include reporting, data, legislation etc. For example the UK Secretary of State for the Environment is the authority responsible for delivering Good Environmental Status in all UK marine

waters and is accountable to the European Commission for *delivering* this within agreed timeframes and for providing the necessary proofs of progress. Decisions may be made by Owner/Decision Makers following consultation and/or negotiation however it is assumed they have the ultimate authority to decide outcomes.

2. **Influencer/Deliverer:**

An organisation, entity or individual which is legally, morally or practically required, invited or obliged to be involved in the official policy development process. They can affect the outcome of the policy process using legitimate channels based on their opinions and views and are also engaged in delivering an action, process, or report which facilitates the interpretation, transposition and/or implementation of the policy.

3. **Deliverer:**

An organisation, entity or individual which is legally, morally or practically required, invited or obliged to be involved in the official policy development process. They can affect the outcome of the policy process based on their delivery of actions, processes or reporting which facilitate the interpretation, transposition and/or implementation of the policy. They cannot, in principle, affect the outcome of the policy process based on their opinions and views.

Instrument Definitions

Policy instruments, including directives, policies, legislation, plans, strategies etc were collated under the following definitions:

1. **General: Water/Marine Specific:** All policy instruments which are, for their majority, focussed on water bodies, whether marine, estuarine, ground, surface etc.
2. **General: Linked to 'Directive':** All policy instruments which contributed to the achievement of the Directive, but which were not (for the majority) focussed on water bodies or included in the following categories:
3. **Environment & Biota:** All policy instruments which are concerned with the definition, management or delivery of environmental, habitat or biological restoration and protection, but which are not specific to fish or commercial fisheries species.
4. **Fisheries:** All policy instruments which are, for the majority, concerned with fisheries activities (including whaling and aquaculture) plus all instruments relating to the health and protection of aquatic fish or commercial fisheries species, including their habitats.
5. **Pollution, Source & Sink:** Policy instruments concerned with all aspects of pollution, including pesticide manufacture, prevention, response protocols, marine dumping, urban waste etc. Typically they address anthropogenic causes and mitigation.
6. **Planning:** All policy instruments which, for the majority, focus on the planning of any anthropogenic marine and terrestrial activities which might affect or threaten the water environment, including land management, environmental assessment, building works and best practice.

Domain Definitions

Instruments and actors were also collated in policy domains. The categories were not exactly the same for actors and instruments and so are confirmed here.

Actor Domains:

1. International
2. European
3. United Kingdom
4. United Kingdom component (national) authorities: Scotland, Northern Ireland, Wales and England.
5. Sub-National

Instrument Domains:

1. International
2. European
3. UK, all authorities: Acts
4. UK, all authorities: Regulations
5. UK, all authorities: Orders and Guidance

Actor and Instrument data were recorded using Microsoft Excel. The stakeholders involved in public consultations were also collated.

Reporting and presentation

Network Analysis software generally requires specific skills and training. It was concluded that a more simple 'freeware' software tool could be adapted to ensure easy access and usability, within and beyond the KnowSeas project, and allow the information to be updated without the need for specific skills or cost.

CmapTools software was chosen as it generates visual maps which allow process flows and relationships to be easily understood and there are no constraints on user access beyond a registration process. CmapTools software has been developed by the Institute for Human and Machine Cognition (IHMC 2010) and is described as a '*knowledge modelling kit*'. Cmaps can be publicly shared on the network of Cmap servers allowing co-workers to synchronously update them from remote sites and to link them to other Cmaps. It automatically creates web pages, image files or Pdf documents and allows the attachment of files, links and data to provide depth and breadth of information within each knowledge map.

3.2 Results

The policy mapping templates were developed in Cmap as the first case study research was conducted. The result is a gridded template based on the actor attributes, instrument categories and policy domains, with the policy development process flow from left to right.

In the actor template (Figure 12) the columns capture the international to local policy domains. All actors are linked to the policy process flow which is described from left to right in the second row. Influencers are reported above this process flow and the other three categories are reported below. The instrument template is designed with vertical columns to display policy instrument domains and the instrument categories are displayed in rows (Figure 13).

There is no hierarchical structure intended in the vertical definition for either the actor or instrument Cmaps.

All CMAP results are downloadable in high resolution from the KnowSeas website: www.knowseas.com

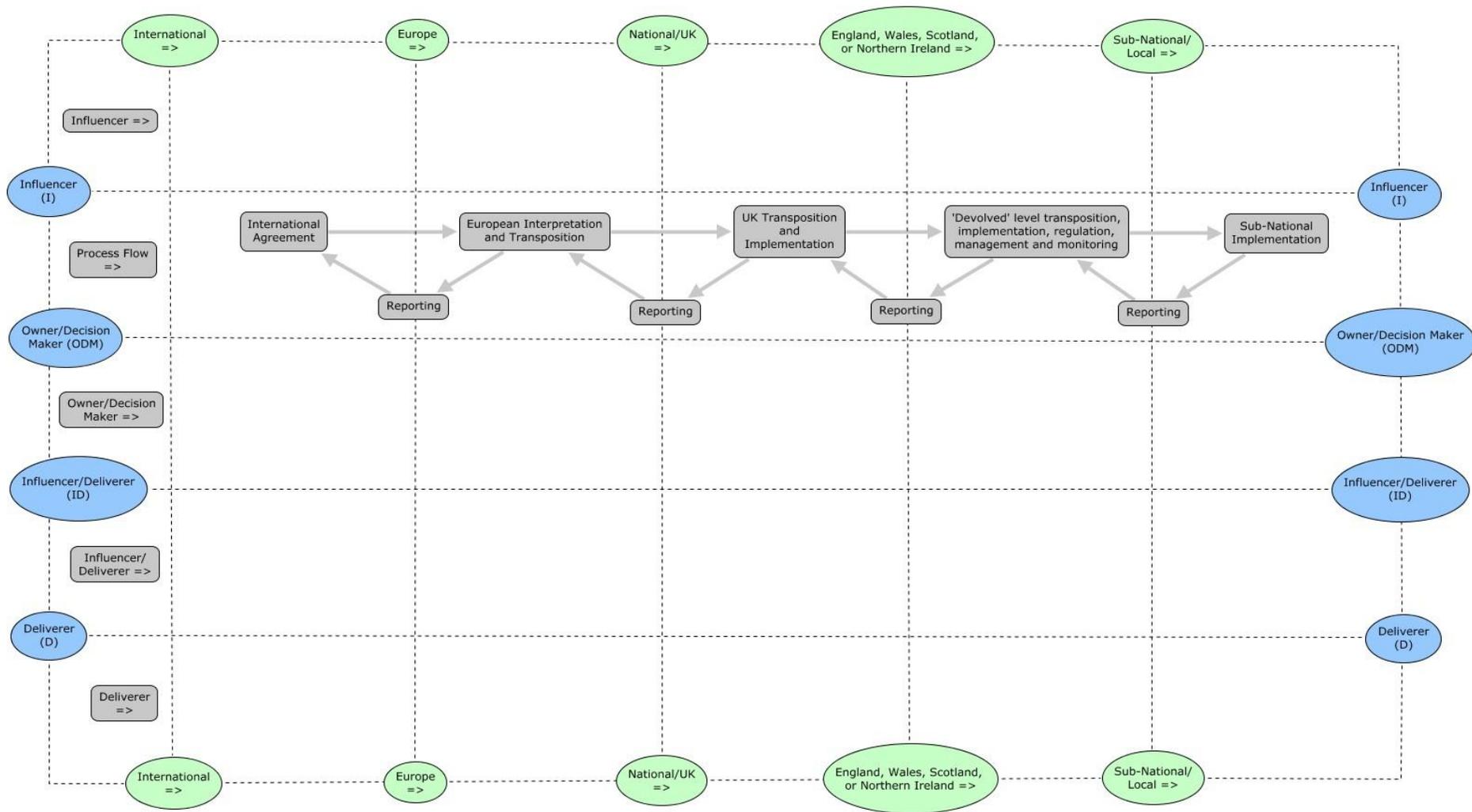


Figure 12: Example of the actor template showing the policy process flow from left to right which is reflected by the international to local columns of actors. The horizontal row groupings aggregate actors on the basis of their 'attributes'.

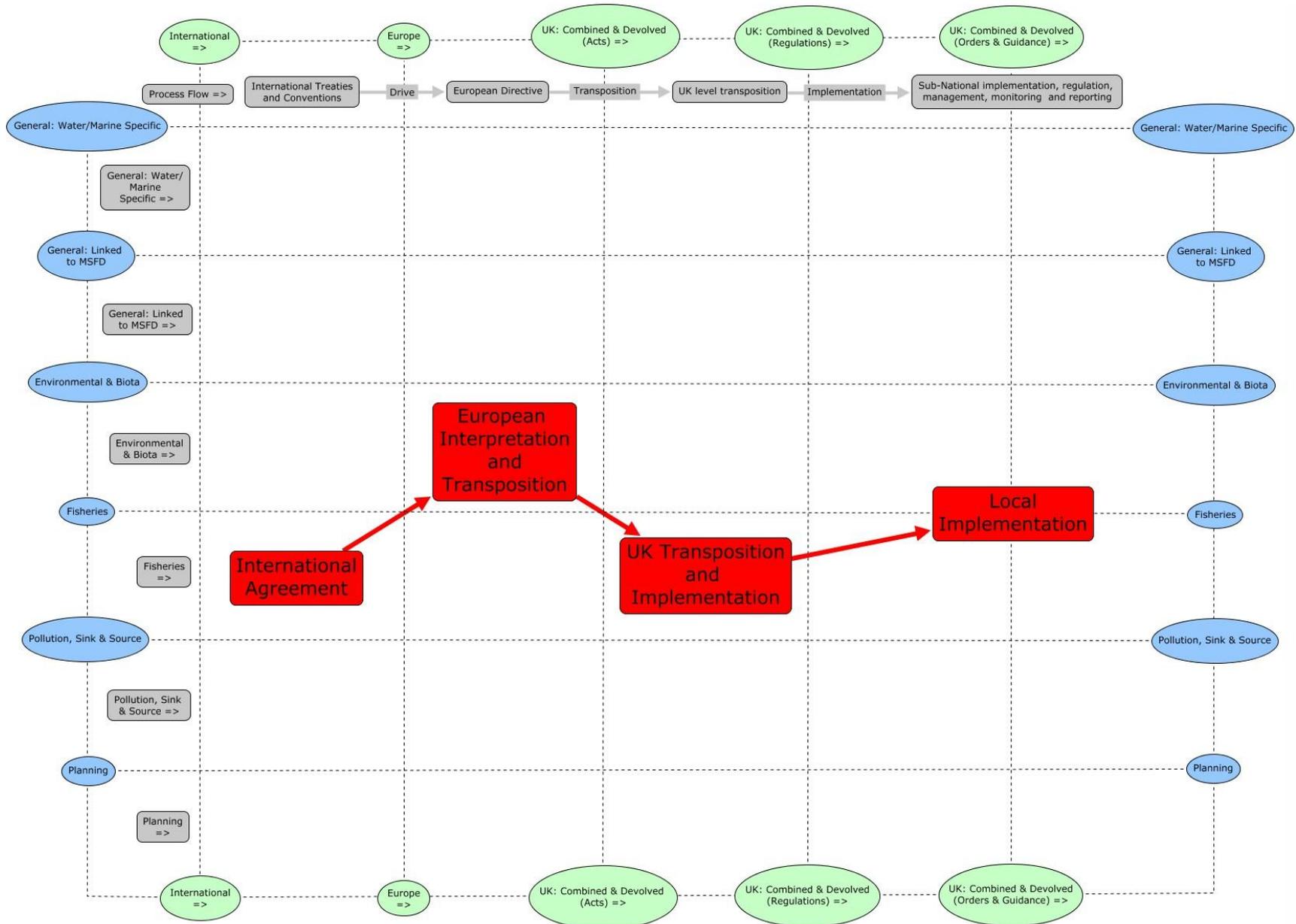


Figure 13: The policy instrument template showing the process flow from left to right as international objectives are interpreted, transposed and implemented. The categories of policy instruments are grouped vertically whilst the policy domains from international to local are captured left to right

Applying the template to a case study

The model was applied to three policy development processes: the MSFD for the UK and the WFD for the Anglian River Basin Management District in England and the Scotland River Basin Management District (for Scotland). The MSFD and WFD are inter-dependent in providing for the environmental health of marine and terrestrial waters. The WFD is already in implementation stage and the MSFD is ‘work-in-progress’.

The case study network maps provide a readily accessible view of the actor and policy networks for the respective Directives using the Rapid Policy Network Mapping approach, however there are a number of caveats:

1. It requires large size printouts (A3) if not used in a software environment e.g. computer/projection.
2. The model does not claim to provide a fully comprehensive database and network map of all instruments and actors.
3. The maps do not capture actors or groups with a historical or transitory engagement in the process. For example, a number of collaborative research and liaison groups were established and disbanded during the development of River Basin Management Plans and are not included.

The Rapid Policy Network Mapping approach does:

1. Capture the majority and most significant instruments and actors in the development of specific policies.
2. Aggregate actors and instruments by policy domain.
3. Provide a robust platform of data as a baseline for reference or further research e.g. multi-modal network analysis, inter-policy networks etc.
4. Provide a web based tool for dynamic collaboration.
5. Allow a direct comparison between policy actors and instruments, by policy domain.
6. Group actors by their attributes, i.e. in terms of owner/decision maker, influencer or deliverer.
7. Group policy instruments by their major focus.
8. Link instruments where there is a direct relationship.
9. Link actors by intra and inter-domain group and/or activity reflecting resource transfer between domains.

Where a number of actors from different domains are related via an advisory or reporting group they are also linked to an actor group node highlighted in a primary colour in addition to a link to the policy activity appropriate to their domain. All advisory/reporting groups are only linked to the policy process where that group has an impact on the policy development process. This allows communities of policy actors from different policy domains to be recognised as a coherent group (see case study actor map for WFD Scotland). It avoids visual over-complication, but does require the user to sum the membership of such groups from actors linked to the group nodes in each of the domains.

The case study policy maps summarised in Table 2 are presented below in figures i-vi. Please note that only the Scotland WFD policy maps show policy domains to a local level (Argyll) and a direct comparison between English and Scottish processes should be made excluding this group (far right in figure v).

Table 2. Table summarising the Rapid Policy Network Maps presented in these results.	
Figure i:	Marine Strategy Framework Directive policy actor network map
Figure ii:	Marine Strategy Framework Directive policy instrument network map
Figure iii:	Water Framework Directive policy actor network map for the Anglian River Basin District
Figure iv:	Water Framework Directive policy instrument network map for the Anglian River Basin District
Figure v:	Water Framework Directive policy actor network map for the Scotland River Basin District
Figure vi:	Water Framework Directive policy instrument network map for the Scotland River Basin District

Note: All maps are downloadable in high resolution from www.knowseas.com

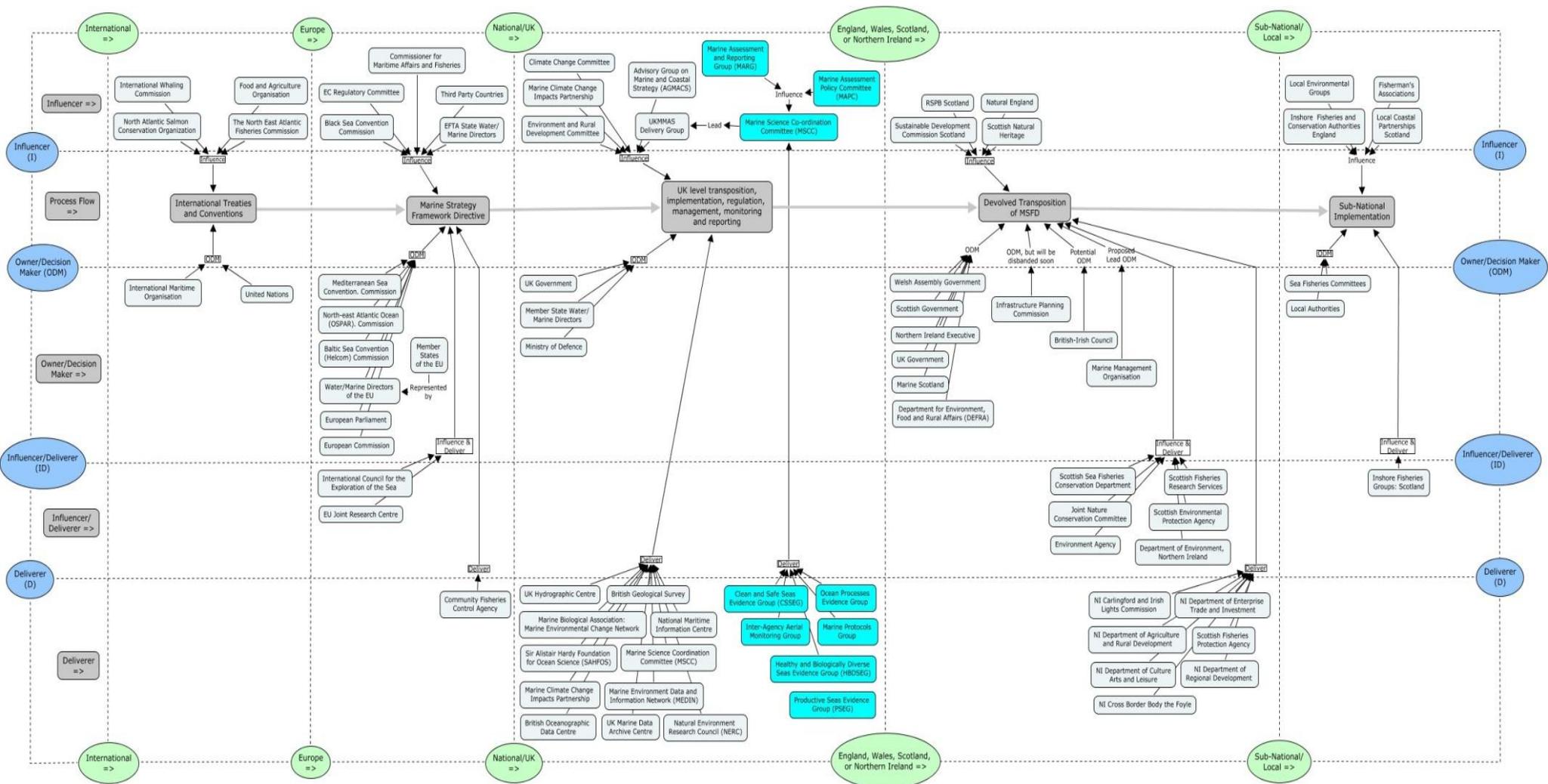


Figure i. Rapid Policy Network Map for the policy actor network involved in the Marine Strategy Framework Directive.

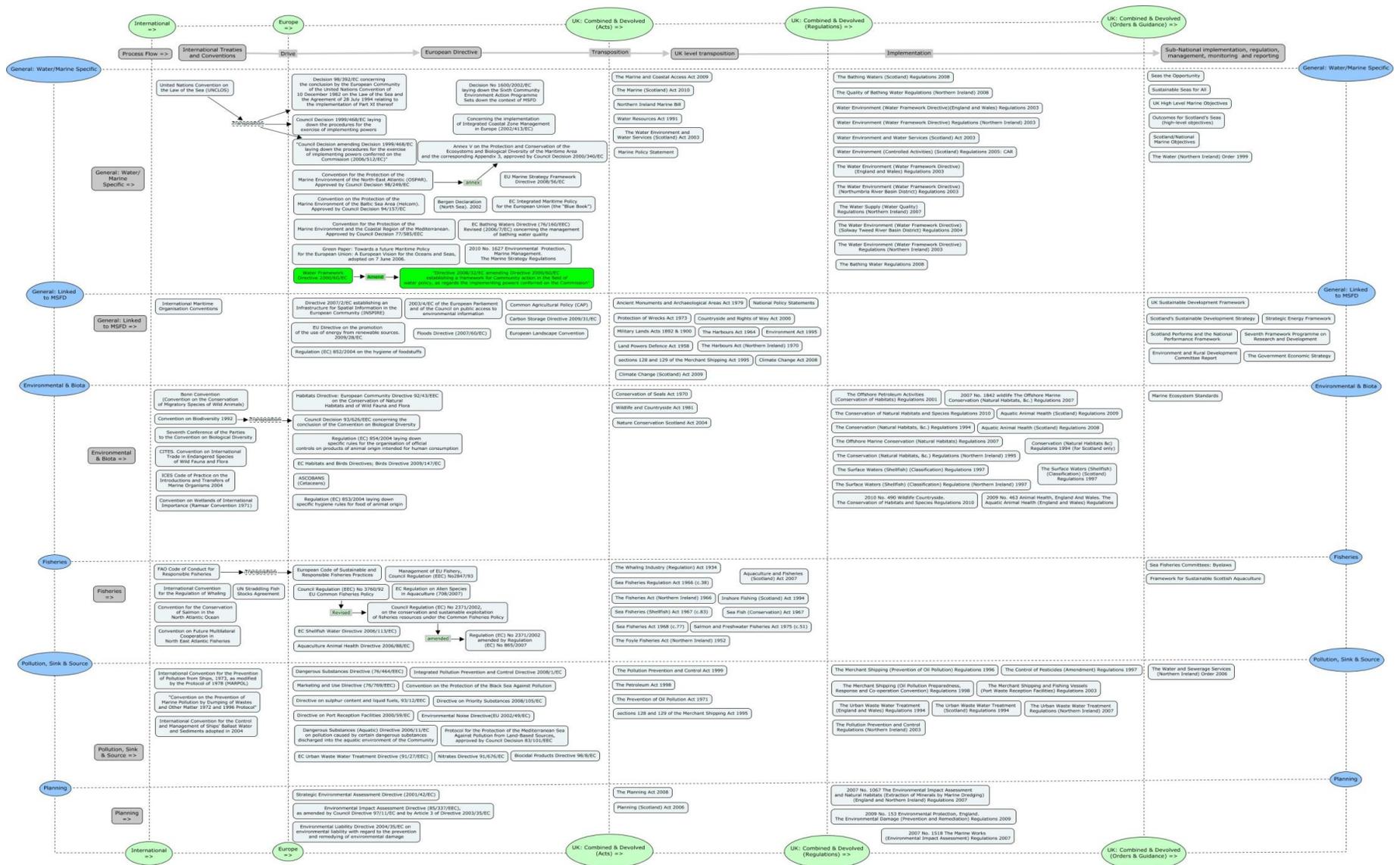


Figure ii. Rapid Policy Network Map for the policy instrument network involved in the Marine Strategy Framework Directive.

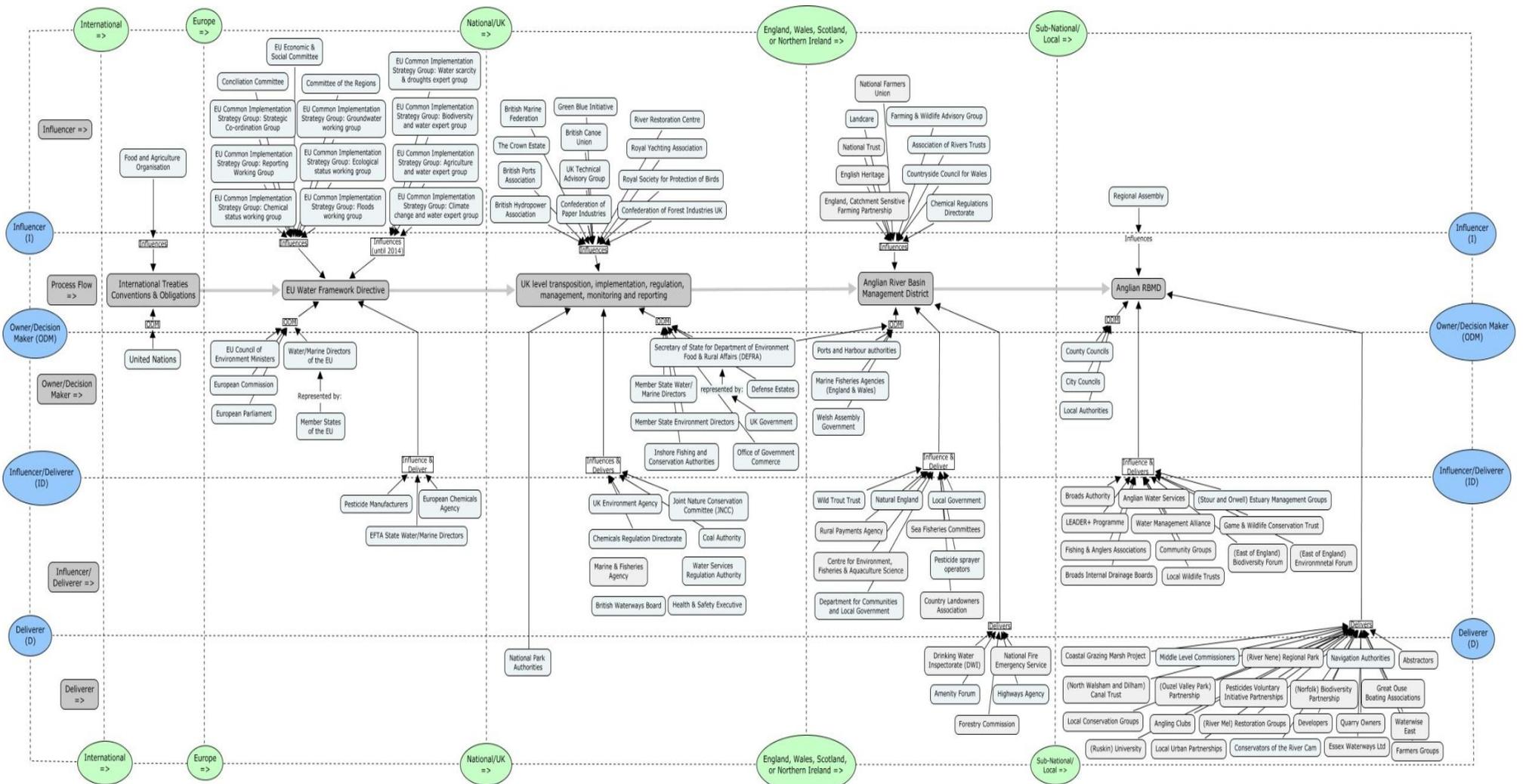


Figure iii. Rapid Policy Network Map for the policy actor network involved in the Water Framework Directive, as implemented for the Anglian (England) River Basin Management District.

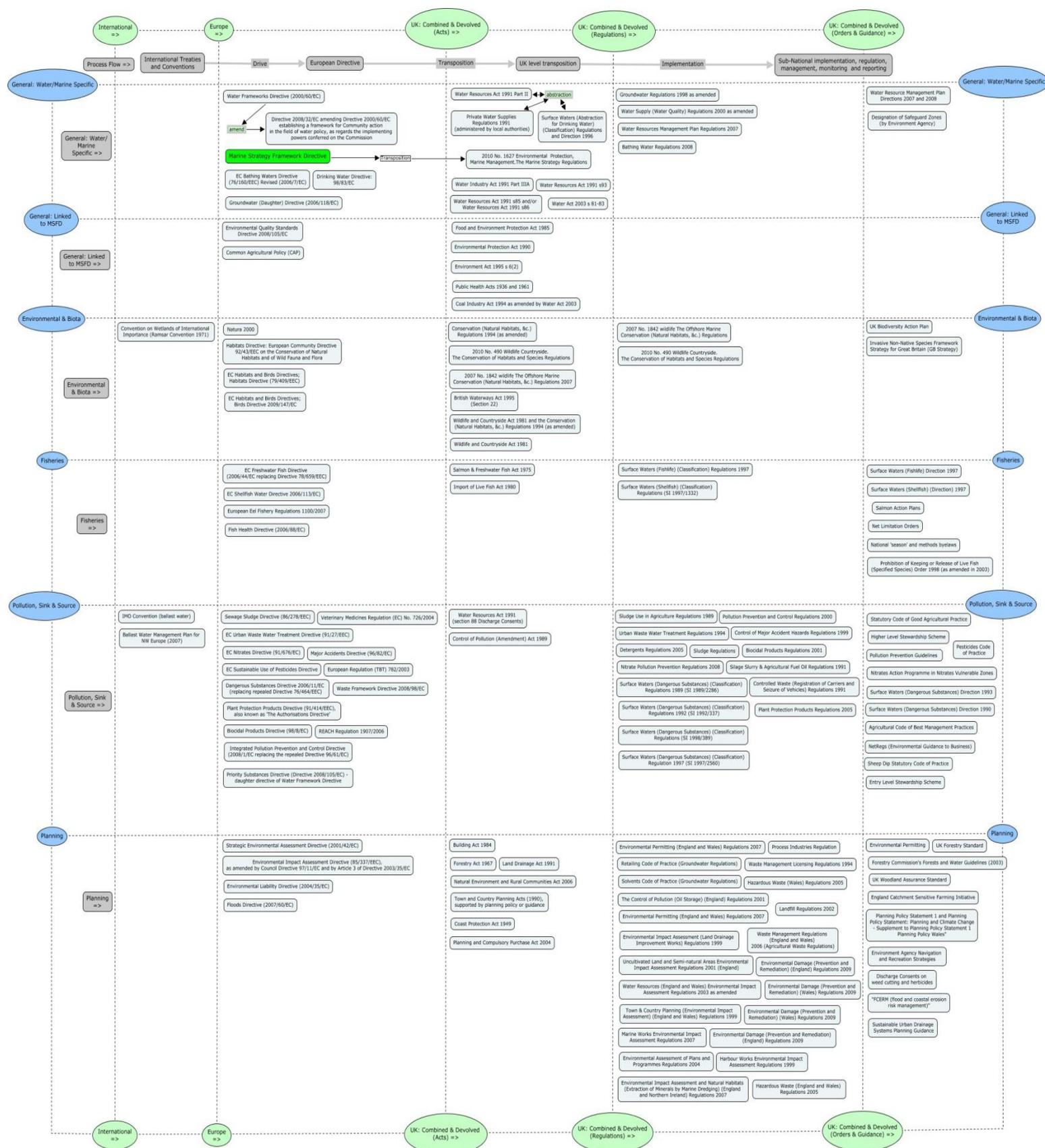


Figure iv. Rapid Policy Network Map for the policy instrument network involved in the Water Framework Directive, as implemented for the Anglian (England) River Basin Management District.

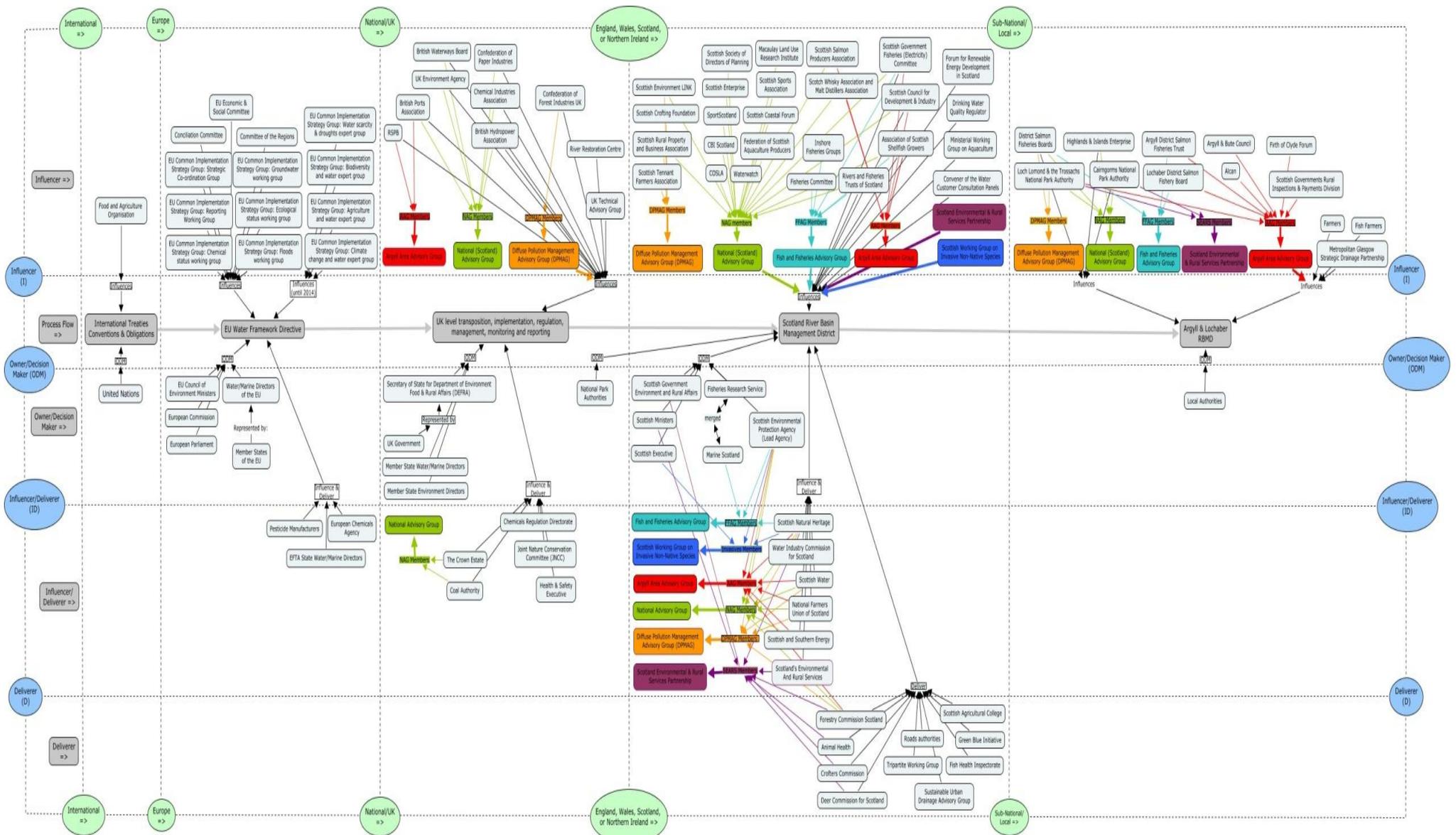


Figure v. Rapid Policy Network Map for the policy actor network involved in the Water Framework Directive, as implemented for the Scotland River Basin Management District

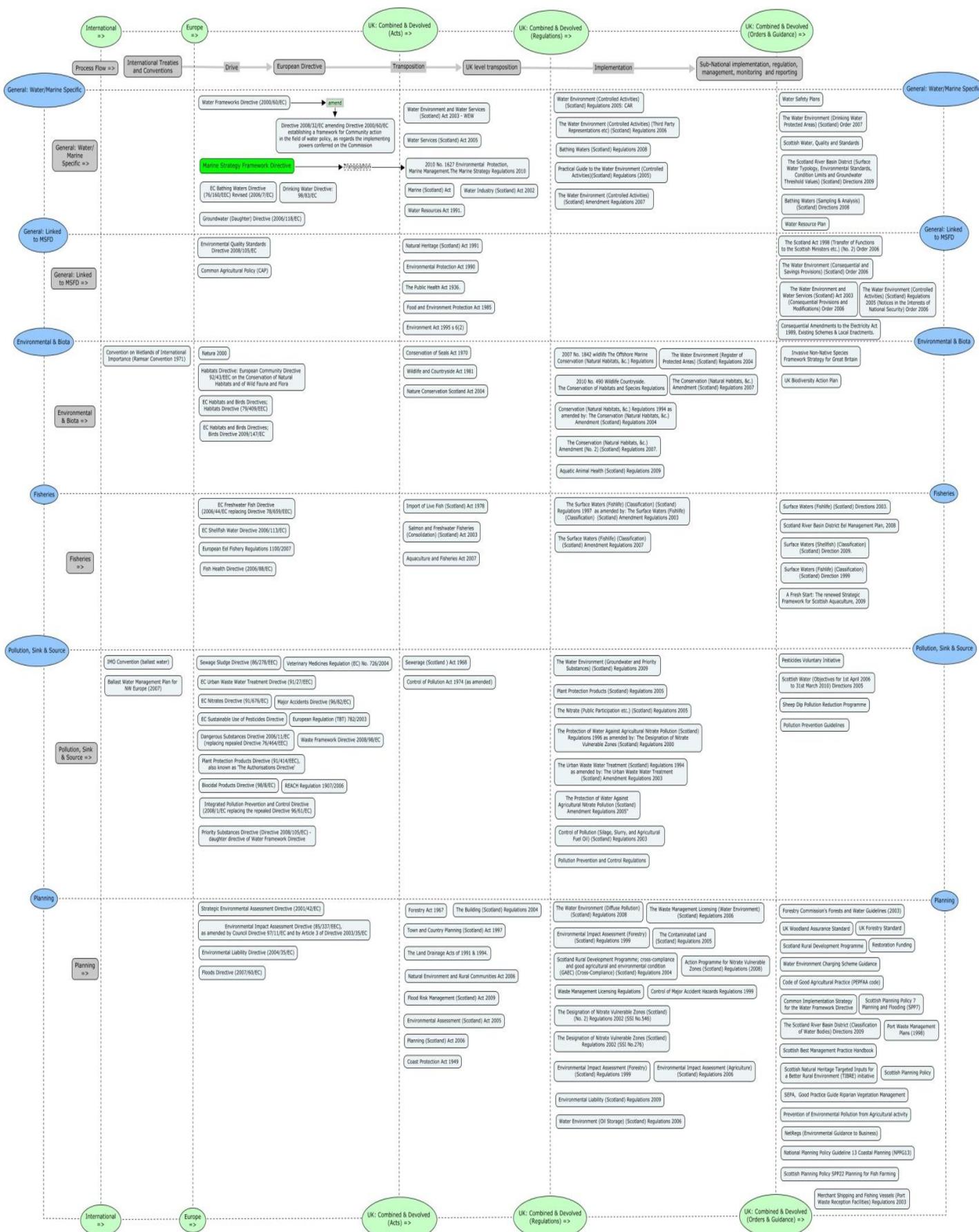
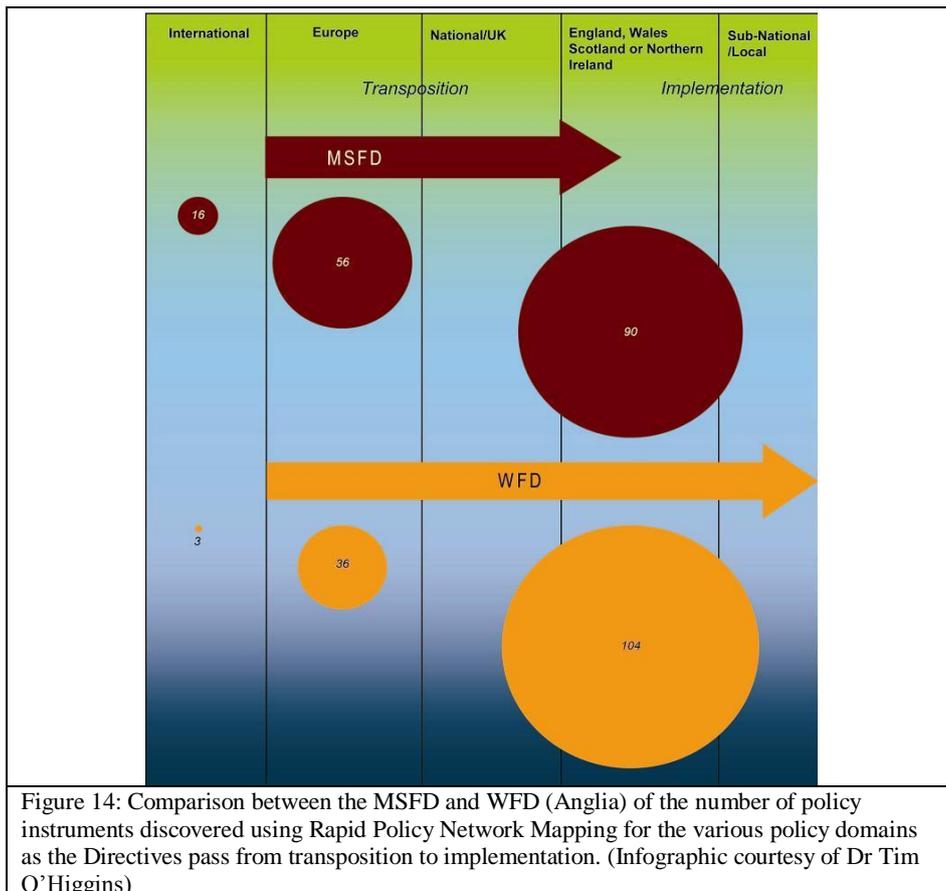


Figure vi. Rapid Policy Network Map for the policy instrument network involved in the Water Framework Directive, as implemented for the Scotland River Basin Management District

3.3 Analysis and Discussion

The maps provide an immediate sense of the size, complexity and scale of the actor and instrument communities involved in the UK. We hope to transpose this process into the national and regional implementation of KnowSeas (and EU) partners. The translation of each Directive to ‘local’ implementation appears to follow a hierarchical ‘hand-over’ of policy between domains (from left to right in the maps) which reflects the lifecycle of the policy process. At a European level there are many more policy instruments in place for the MSFD than the WFD (Figure 14). If a pro-rata assumption is applied it would suggest that as the MSFD is further implemented in the UK domain it will require the development of a significant number of new national policy instruments. Crudely, if in the WFD policy process 36 EU instruments catalysed 104 UK policy instruments, then the 56 EU instruments in the MSFD policy process could require the creation of up to 70 more UK policy instruments as it is implemented. This assumes that both policies are of an equal complexity. It is recommended that a further case study should be conducted for another Member State in order to confirm or deny this observation.



The WFD has reached a relatively mature implementation stage, as shown by the large number of Acts, Regulations and Orders already in place and the actors positioned in each sub-EU domain. The MSFD is still at the UK transposition stage and does not appear to have driven the creation of significant numbers of new, dedicated UK level legislation, nor is there evidence of comparable numbers of actors yet engaged at sub-UK levels.

The MSFD maps also reflect the debate around the UK governments' wish to develop a single UK strategy with the lead agency (actor) undecided. There are actors from all devolved authorities still collectively involved at a UK level i.e. dedicated policy development does not appear to be taking place for each of the devolved authorities. A summary of the MSFD objectives and timeframes also goes some way to explain this situation (Appendix 1).

Comparing the implementation of the WFD between England and Scotland shows examples of 'vertical actor engagement' in the Scottish implementation which was not apparent in the English process. Vertical actor engagement is defined here as the grouping of actors from different policy domains into advisory or delivery groups which facilitates 'vertical' information and resource transfer across scales. This finding supports the opinion that the 'command and control' approach to government found in England is not as prevalent in Scotland.

A comparison of actor community size across the domains (Figure 15, left) highlights the difference in the life cycles of the Directives. The MSFD process shows significantly less actor engagement at a sub-UK level whereas both WFD processes are in implementation stage with high actor engagement at this level. There is a similar effect seen with the policy instrument development (Figure 15, right), with the MSFD lagging behind the WFD implementations. It is noteworthy that both the England and Scotland WFD implementations have similar numbers of policy instruments related to their delivery despite the differences in legislation.

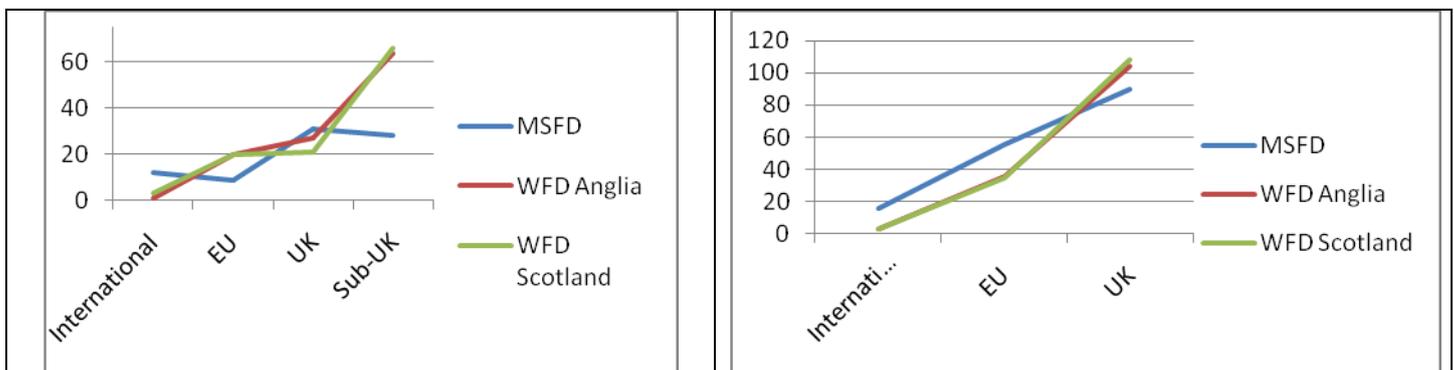


Figure 15: Graphical representation of the number of policy actors (left) and instruments (right) in each policy domain for the three delivery processes examined.

There are many examples of policy instruments and actors being common to the implementation of both Directives e.g. Habitat Directive, Environment Agency etc. which should lead to greater efficiency in developing a programme of integrated policy delivery in the coastal zone. This is a leap of logic however as each Directive may be the responsibility of different groups and individuals within these actor organisations and so any actual efficiency will be dependent on internal co-ordination, which cannot be assumed. If the MSFD and WFD are to work in protecting terrestrial and marine waters in a seamless way it

will be critical that this intra-organisational coordination is in place in addition to domain and vertical integration.

3.4 Next Steps and Concluding Comments

As marine planning and policy development attempts to respond to the threats to marine ecosystem health and sustainability, a plethora of research and implementation programmes with demanding objectives have been initiated. An understanding of the policy context in which they operate is relevant to many of these programmes, however they typically do not have the budget, resources or time to invest in an in-depth policy network analysis, nor do they require the level of information it might provide. It is hoped that Rapid Policy Network Mapping will deliver a solution to this problem by providing a baseline assessment of a policy community in an easily understood and accessible format.

The maps also provide a platform for further research which could include a gap analysis of the policy instruments and actor responsibility and authority to assist in integrating the WFD and MSFD processes at the coastal interface. An understanding of the potential issues could provide guidance on achieving a more efficient division of resources and remove duplication in the policy implementation.

A benefit of this web-based approach to policy network mapping is that it is easily replicated and the choice of the Cmap platform means that the policy maps can be placed on Cmap servers for open collaboration. The possibility to add attachments (Directives, website links etc.) to each of the nodes means there is the potential to build a real-time pro-active data-warehouse accessed via the internet and build a catalogue of inter-related policy maps on a country by country basis. By saving maps at pre-determined intervals it would also be possible to observe the evolution of a policy and its associated actor and instrument communities over time.

In conclusion, Rapid Policy Network mapping provides a real opportunity to create a policy data environment based on a relatively small investment which would provide value to a large number of users.

4. A SURVEY OF EUROPEAN VALUES TOWARD THE OCEANS

4.1 Introduction

Research has shown that prioritisation by scientists of significant marine environmental issues may differ greatly from those of industry or the general public. Additionally, differences in perceptions or levels of concern exist between and within stakeholder groups and across Regional Seas. Experiences with the Water Framework Directive have demonstrated how human value judgments can affect the definition of acceptable impacts.

The scoping study of actors, policies and issues in relation to Europe's Regional Seas in KnowSeas WP2 aims to map these various perceptions and also to assess the policy response at European and regional sea level. However a significant stumbling block in this attempt is the lack of direct evidence of public perceptions of marine environmental management issues. Concerning the oceans, the views of affected individuals and communities across Europe are relatively unknown. To date we have been attempting to elicit this principally through analysis of submissions to EU policy consultation processes. However this type of data tends to reflect relatively fixed stakeholder positions on specific issues rather than public perceptions. While the positions of industry are generally captured through responses to the many and varied policy consultations, the opinion of the 'person in the street' is relatively unknown. Yet, crucially, it is the collective choices made by communities in the living and non-living resources they use, the places they visit, and the places they live that drive the pressures on coastal and ocean environments. Another important factor is that the public consciousness on the oceans will play an important (if yet undetermined) role in delivering reforms such as marine planning that have considerable consequences. For example, the large scale development of marine renewables, the implementation of conservation regulations (i.e. Habitats Directive) and the reform of fisheries is driving social, economic and demographic changes along European coasts. Understanding the perspective of communities will be critical in how the policy process unfolds.

While limited surveys have occurred at the national or sub-national scale concerning the value of individuals towards the sea, to date no European comparative survey has been undertaken to explore comparative values.

We propose that a simple, cost-effective telephone survey of the general public across Europe's regional seas would provide extremely useful information in this respect. We are currently working with external partners to deliver, for the first time, a survey that assesses the distribution of values, concerns and aspirations of individuals and communities concerning the oceans across Europe. The policy agenda in marine conservation is moving forward rapidly through the Marine Strategy Framework Directive; in maritime planning and development through the Integrated Maritime Strategy; and in fisheries through CFP reform.

4.2 Objectives

The objective for the survey is:

To describe and assess the attitudes and values of European individuals towards pressures, conservation and management of the oceans.

Sub-objectives

- To assess and compare national perspectives on the importance of the oceans compared to other issues;
- To assess the pressures and challenges facing the oceans from the public perspective;
- To explore ‘ocean awareness’ in the public consciousness;
- To explore the perspective the competence of institutions, individual vs collective action, and management approaches such as Marine Spatial Planning (MSP) in resolving oceans issues;
- To explore the concept of ‘distance from coast’ as a factor in marine awareness.

The survey will target individuals from several EU countries aiming to get the view of the ‘man on the street’ concerning the sea, its relative importance to other issues, perceived problems and solutions. While the views of industries and interest groups (policy communities) are generally well documented, the view of individuals and communities is less so. It is important to understand these concerns and aspirations for several important reasons:

- Communities are on the ‘front line’ in terms of impacts from the implementation of marine spatial planning and conservation measures;
- Community support and conflict is highly influential in determining the outcome of local and regional planning and conservation activities;
- There is a lack of assessment of the level of basic ecological knowledge in the general community concerning the sea; improved information will assist in targeting educational and awareness strategies.

4.3 Sampling Strategy

We have developed a draft action plan in consultation with an international survey company which has established operations and survey lists across Europe. The survey will conduct 1,000 online interviews with a nationally representative sample of adults aged 18-64. In all markets quotas will be set and the data weighted to reflect the nationally representative profile of adults within each market by Age, Gender and Region. The following markets will be sampled:

UK

Spain

Germany or France

Portugal

Poland

Italy

The survey will fund 10-12 closed questions with 3 demographic criteria (age, sex, region). The demographic questions will be included automatically for weighting purposes. In terms of demographics, age gender and region will be included in the data tables as cross breaks. We also propose the ‘distance from coast’ question to be included in data tables alongside demographic data to explore this variable as a factor in ocean awareness.

For several questions we propose to use the well-established 5 point ‘Likert scale’ in order to use approaches for analysis of ordinal data and non-parametric statistics. For example, several questions will be in the format:

1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly agree

Please note that the questions provided below are initial draft questions and will undergo rigorous testing and review amongst the KnowSeas partners and in consultation with the survey company, who will provide full support in wording our questions to ensure that they are in line with the research objectives. The survey company will also provide full translation of the questionnaire for each market and transcription of results. In addition we are actively collaborating with the National Geographic Society’s (NGS) global survey of environmental values that includes a marine component. We have included 2 modified NGS questions and will be actively promoting each other’s efforts and filling in gaps in the survey response. One clear differential is that our questions focus exclusively on the EU and explore the confidence in management options such as MSP.

For delivery we propose 4 phases:

Phase 1: SAMS and the KnowSeas¹ consortium will initially review the questions and develop a final agreed list.

Phase 2: SAMS and Knowseas will pilot the initial survey questions in the UK and will send out responses and alterations to all partners. A final survey instrument will be developed.

Phase 3: The final instrument will be delivered to the survey compacy. It will take approximately 14 days from signing off the questionnaire to delivering the data.

Phase 4: SAMS and Knowseas will undertake statistical analysis of the results and prepare a final report in consultation.

A single set of data tables will be provided for each country and a combined totals table will also be produced including all the countries which will be used to look for differences. Data can be delivered in a raw format such as ASCII, Excel or SPSS depending on our requirements.

¹www.knowseas.com

4.4 Questions for survey

Q1. How concerned are you about each of the following issues?

Pollution
Poverty
Climate change
The economy
Terrorism & war
Food safety and availability
Health and education*
Affordable energy supply
Cost of living
Loss of species
Spread of diseases
Health of the oceans

(Rate on a scale of 1-5 where 1 = “not at all concerned”, 3= neutral and 5 = “very concerned.”)

Q2. In light of the issues above, what priority would you give to protecting the oceans?

1. Extremely low priority
2. Low priority
3. Neither low or high
4. High priority
5. Extremely high priority

Q3. Now, please tell me if you agree or disagree with the following statements.

“The oceans are so large, it is unlikely that humans will cause lasting damage to them.”

(1. Agree, 2. Disagree 3. Do not know)

Q4. Thinking about coastal waters and beaches in your country would you rate their health as:

1. Excellent
2. Good
3. Average
4. Poor
- 5 Very poor
- 6 Do not know

Q5. Thinking about the deep oceans away from the coast (out of sight of land) would you rate their health as:

1. Excellent
2. Good
3. Average
4. Poor
- 5 Very poor
- 6 Do not know

Q.6. Of the issues listed below, what has the most impact on the oceans?

Oil and gas extraction
Pollution from industry

Pollution from households
Fisheries
Shipping
Aquaculture (fish and shellfish farming)
Renewable energy
Climate change
Invasive species
(Rate on a scale of 1-5 where 1 = “no impact”, 3= moderate impact and 5 = “very high impact”)

Q.7. How is the ocean important to you?

Recreation and tourism
Culture and identity
Food
Non recreational travel
Employment
Curiosity and knowledge
Mystery
Scenery and seascape
Biodiversity
Natural cycles
(Rate on a scale of 1-5 where 1 = “not important, 3=neutral” and 5 = “very important”)

Q8. Of these issues, what is the most important to you?

Q9. How competent do you think the following are to manage and protect the ocean environment?

European Commission
National Government
Local authorities
Environmental organisations
Industry
Community organisations
Individuals (you, family, friends etc)

(Rate on scale of 1-5, 1=Not competent, 3 = moderately competent, 5= highly competent)

Q10. Do you think the national government or the European Commission should restrict access to areas of sea for environmental protection?

(1. Agree, 2. Disagree 3. Do not know)

Q.11 Do you think that governments or the European Commission should plan the oceans like we plan the land (e.g. land planning, town and city planning)?

(1. Agree, 2. Disagree 3. Do not know)

Q.12 How far do you live from the coast? (will convert to miles for UK)

1. 0-10 km
2. 11-20 km
3. 21-40 km
4. 41-60 km
5. Over 61 km

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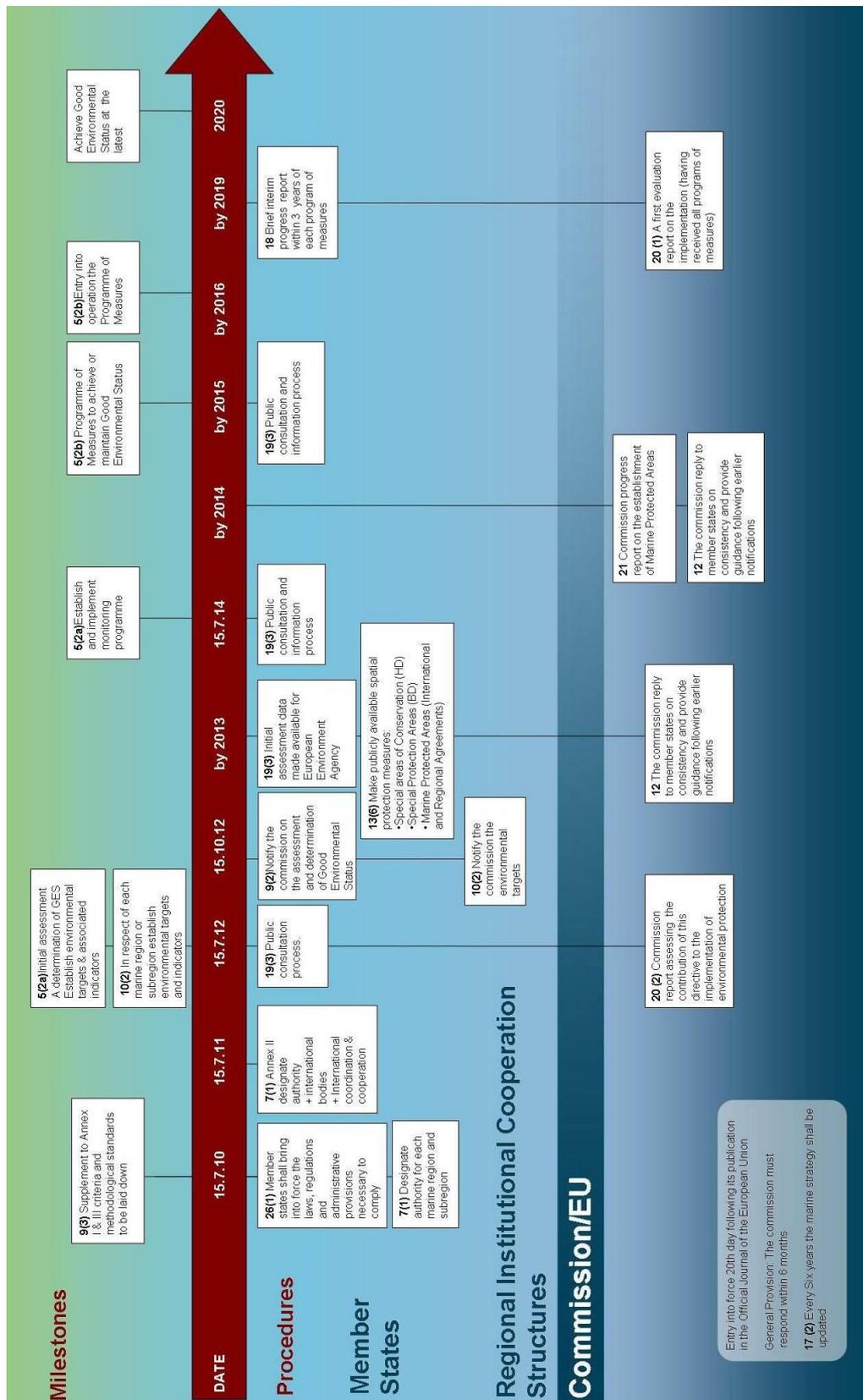
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APPENDIX 1: A TIMELINE FOR THE IMPLEMENTATION OF THE MARINE STRATEGY FRAMEWORK DIRECTIVE



APPENDIX 2: ANALYSIS OF THE DATA FROM THE MSFD INTERNET CONSULTATION

This work involved the analysis of the contributions received by the EU Commission during the Internet-based Consultation that took place between 15 March and 9 May 2005, regarding a new thematic European Policy – the future Marine Strategy Framework Directive (MSFD). From a total of 133 responses, only 102 were used, as some contributions did not respond to the fields of interest for the scope of this work but mainly because a fraction of them involved European-wide organisations, non-European countries or contributors not identified.

The interest of this work was to pool the perceptions of different stakeholders from the different regional seas and so the contributions from countries sharing more than one regional sea (e.g. Germany, France, Spain) were used twice.

Although there were contributions from 22 of the European Member States, half of the responses originated from only 3 of them: the U.K., Belgium and The Netherlands. There is therefore a considerable mismatch of coverage between countries and, for the matter of this work, between regions. While the NE Atlantic, mainly North Sea, is reflected in 89 contributions, the Mediterranean and Baltic in less than 25 and the Black Sea is virtually absent from this consultation (only 1 contribution from a Turkish organisation).

Table I – Sectors contributions to the MSFD Internet Consultation (2005)

Region	Stakeholder	Nr Contributions
NE Atlantic	Total	89
	Fishing Industry	7
	Ports and Shipping	2
	Oil Companies	1
	Aggregates	1
	Agro-chemicals	5
	Authorities	12
	Research	21
	Conservation	17
	Public	20
	Other	3
Baltic Sea	Total	23
	Agro-chemicals	4
	Other Industries	1
	Authorities	2
	Research	2

	Conservation	8
	Public	6
Mediterranean		
	Total	24
	Fishing Industry	1
	Agro-chemicals	3
	Authorities	4
	Research	7
	Conservation	3
	Public	6
Black Sea		
	Total	1

Since this consultation process was in great part oriented and the participants invited to answer to specific questions and select from a few options, only part of the questionnaire was considered. The participants were requested to rank the general objectives of the Directive in terms of importance (*High, Medium, Low*):

- *To protect and, where applicable, restore the function and structure of marine ecosystems in order to achieve and maintain good environmental status of these ecosystems;*
- *To phase out pollution in the marine environment so as to ensure that there are no significant impacts or risk to human and/or on ecosystem health and/or on uses of the sea;*
- *To control the use of marine services and goods and other activities in marine areas that have or may have significant impact on status of the marine environment to levels that are sustainable and that do not compromise uses and activities of future generations nor the capacity of marine ecosystems to respond to changes.*

The responses to these questions were divided by sectors and regional seas. Regardless the fact that terms such as “*protect the function and structure of marine ecosystems*” can be very broad and imply many other issues, it is assumed that the prioritization of these general objectives reflects the level of concern that each respondent has towards particular aspects of the marine environment.

The questionnaire also invited participants to identify other specific objectives that should be highlighted. These answers were translated into *Issues* within the list defined at the onset of this work. These basically correspond to the current 11 descriptors of the MSFD.

Given the nature of the participation (not a representative and random survey but voluntary and pro-active) and the nature of the consultation mechanism (semi-orientated questions), it is not possible to make robust quantitative conclusions about perceptions but only to identify possible trends in the answers given by different stakeholders, from different regional areas.

General conclusions regarding stakeholders' perceptions of marine issues

Composition of respondents in terms of stakeholders groups

Fig. I illustrates the percentage of different sectors that participated in the public internet consultation process. The highest number of submissions came from individuals that did not identify connection with a particular organisation or sector, classified as 'Public'.

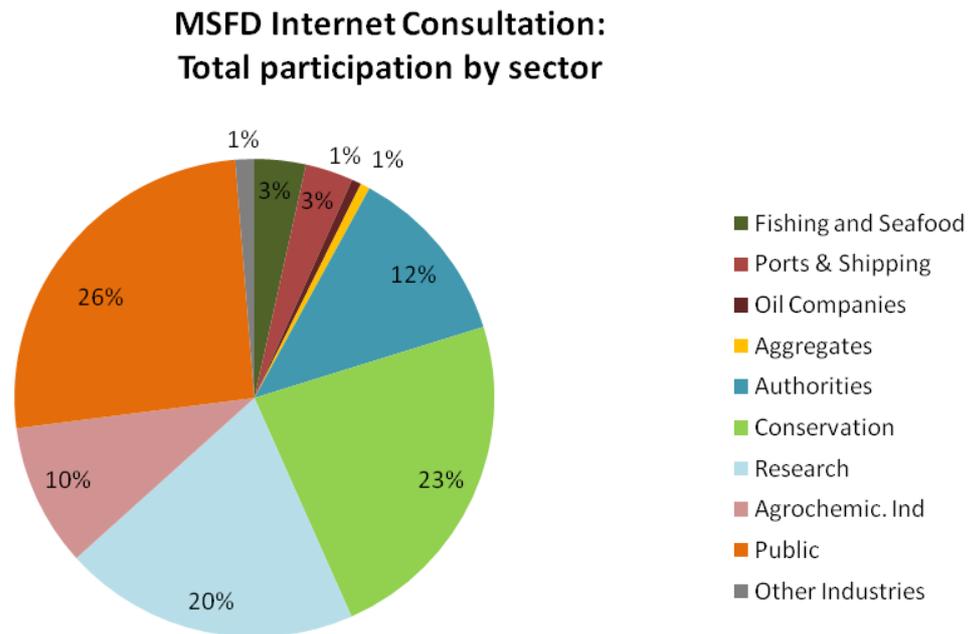


Fig. I – Composition of the participants in the MSFD Internet Consultation (2005), in respect to different sectors. It includes all respondents from Europe-wide organisations and non-European countries.

NORTH-EAST ATLANTIC

Stakeholders' prioritization of the 3 general objectives of the future MSFD

The ranking of the 3 general objectives of the current MSFD selected as *High* can be seen in Fig II.

NE Atlantic

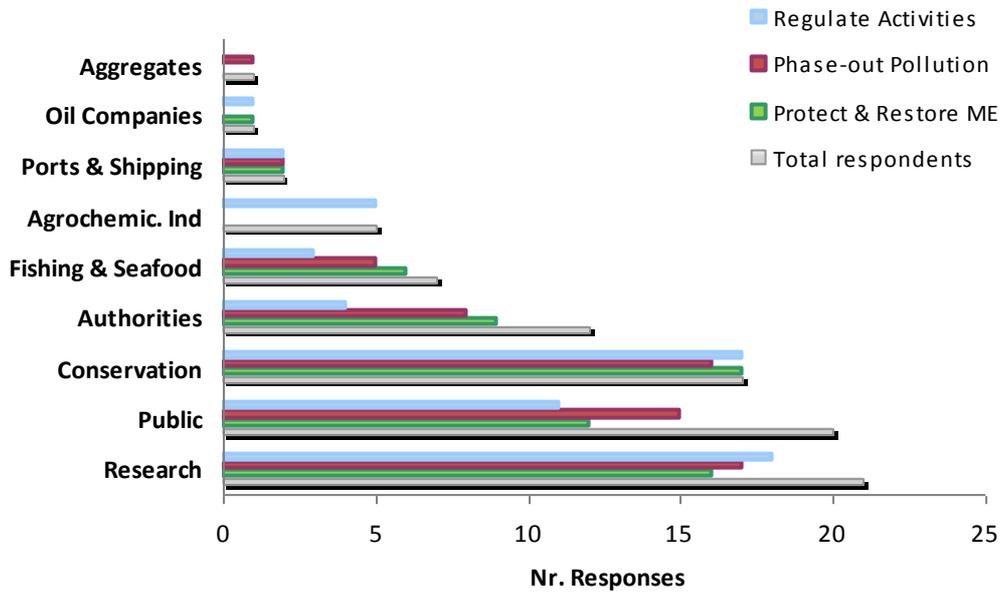


Fig. II – High priority given as response to the rating of the 3 general objectives of the MSFD (to regulate activities that may have impact on the marine environment; to phase-out pollution and protect and restore marine ecosystems) by each stakeholder group.

Additional issues identified

Fig. III reflects the occurrence of other specific objectives mentioned by the respondents which, according to them, should be highlighted and taken in consideration by the future MSFD. These responses have been translated into the set of *Issues* established for the scope of this work. Responses that did not fall into any of the categories were grouped as *Other* and further specified.

MSFD Consultation: Issues - NE Atlantic

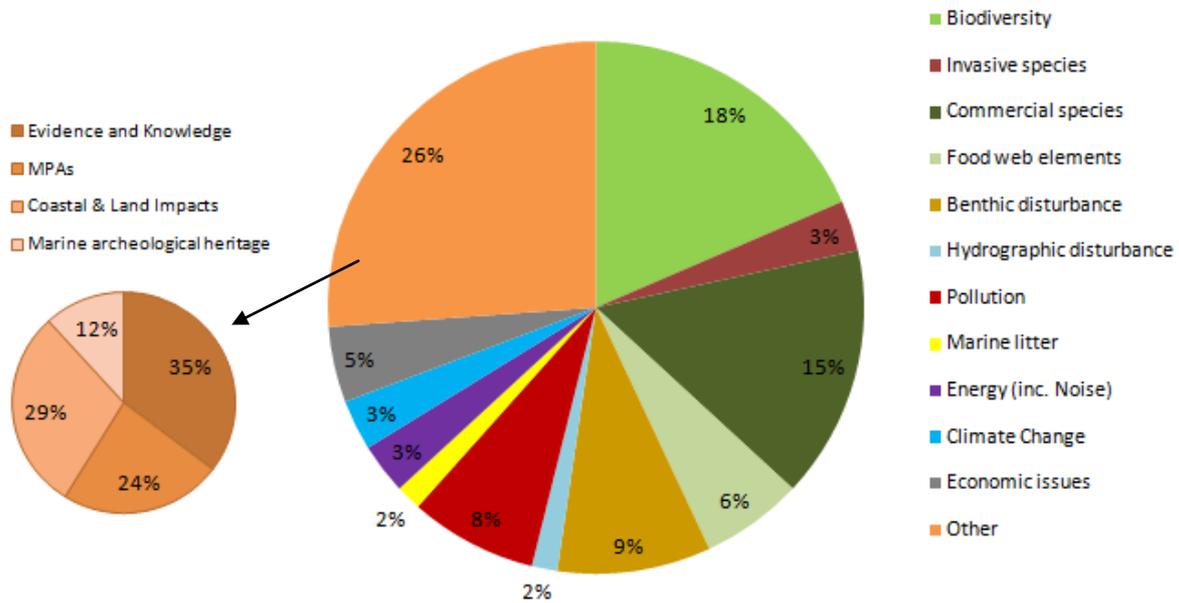
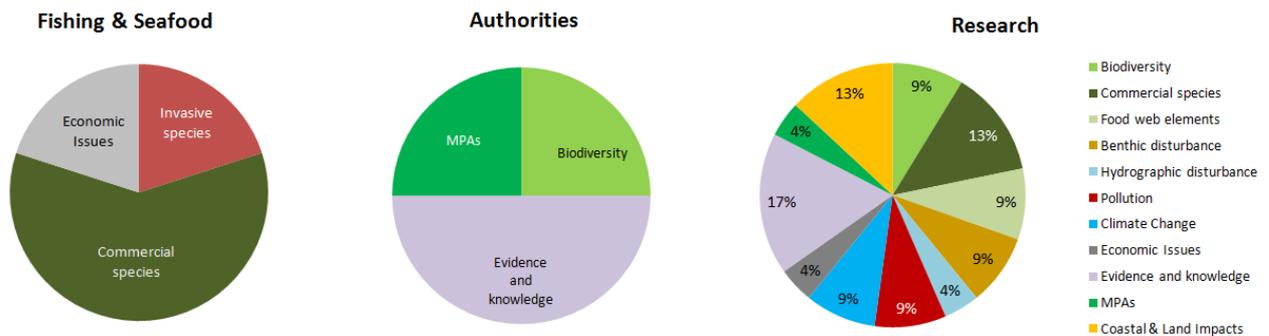


Fig. III – Issues identified by all participants from NE Atlantic countries during the internet consultation process, 2005.

The main issues of concern in NE Atlantic seem to be associated with the loss of biodiversity, the status of commercial species of fish, benthic disturbance and pollution, which altogether correspond to half of the concerns expressed. It is relevant to highlight that within the benthic disturbance, the exploitation of marine aggregates was the aspect more often referred to, in particular by the conservation and public sectors (Fig. IV).

Issues in relation to Stakeholders groups

Fig. IV represents the issues that each stakeholder group specified as needing special attention.



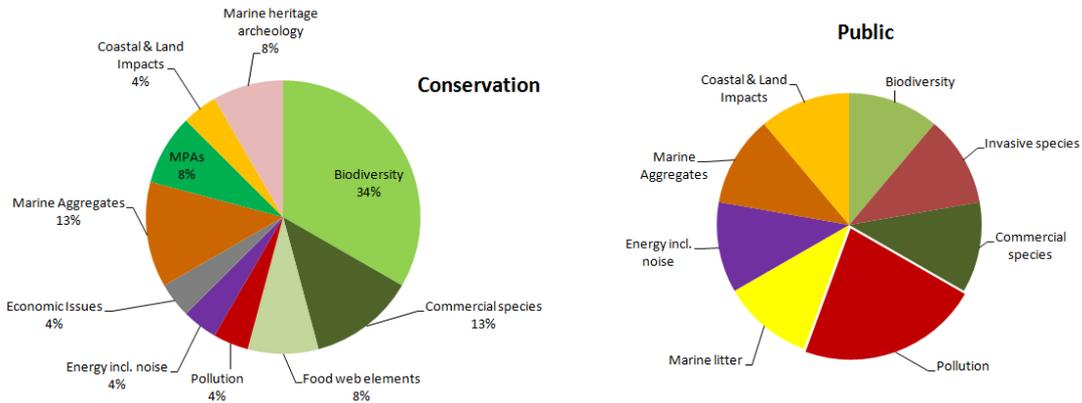


Fig. IV – Occurrence of issues mentioned by different stakeholder groups from countries bordering the NE Atlantic.

Fishing Industry and Recreation

This was a well represented sector, with 7 contributors. 6 out of 7 consider the protection and restoration of marine ecosystems and 5 out of 7 the phasing-out of pollution should be of high priority (Fig. II).

Concerns about the situation of commercial fish stocks and the impact of certain fishing practices were specified. Aquaculture contributors mentioned the risk of introduction of alien species through ballast waters (Fig. IV).

Ports and Shipping

The 2 contributors consider all the three general objectives as high priorities. No specifications of other issues were given.

Oil Industry

There was only one contribution from this sector, which has given high priority to ‘protect and restore marine ecosystems’ (Fig. II). Phasing out pollution was rated as a *medium priority*. No specific issues were referred to.

Aggregates Exploitation Industry

There was one contribution from this sector, which has given high priority to phasing out pollution. Both the protection of marine ecosystems and regulation of human activities that may have impact on the marine environment were considered as *medium priority*. No other issues were mentioned.

Authorities

75% of this group considers it a high priority to protect and restore marine ecosystems, followed very closely by phasing out pollution (Fig. II). Specifically, these contributors referred to the need for Marine Protected Areas and the importance of investing in knowledge about the marine environment (Fig. IV).

Conservation organisations

This was the third highest contributor with a diverse range of concerns and was almost consensual regarding the protection of marine ecosystems, phasing out pollution and controlling human activities as high priorities (Fig. II). As seen in Fig. VII, not surprisingly the loss of biodiversity is the issue that raises more concern, followed by the status of commercial fish stocks and the damaging impact of bottom-sea activities, in particular aggregate exploitation. The need to protect marine archaeological heritage is referred to by a couple of individuals, representing this type of interest.

Research Institutes and Academics

Protection and restoration of marine ecosystems, phasing out pollution and the control of human activities are all seen as high priorities to this group of stakeholders (Fig. II). Specifically, the contributors referred to the loss of biodiversity and commercial species, bottom-damaging practices, the importance of ecosystem-based management (including its chemical/physical aspects), pollution, climate change and the need to invest in better knowledge of the marine environment (Fig. IV). This sector presented concern within a wider range of issues and had the highest number of contributions.

Agrochemical Industry

Consensually, this group identified as high priority the control of human activities. Neither protection of Marine Ecosystems nor pollution were considered of high concern.

Public

These are the responses of individuals not linked to a specific organisation and correspond to the second highest number of contributions. Protection of Marine Ecosystems and phasing out pollution were considered high priorities by 60% and 75% of the respondents respectively. Some specific aspects pointed out include the importance of taking an ecosystem approach, pollution and marine litter, underwater noise, the lack of regulation of marine aggregates and also the impact of coastal development and land activities on marine ecosystems (Fig. IV).

BALTIC SEA

For the respondents from this region, the ranking of the 3 general objectives of the MSFD selected as *High* is shown in Fig. V.

Additional issues identified

A total of 15 specific different issues were mentioned by the respondents from countries bordering the Baltic Sea, with their proportion of occurrence shown in Fig. VI.

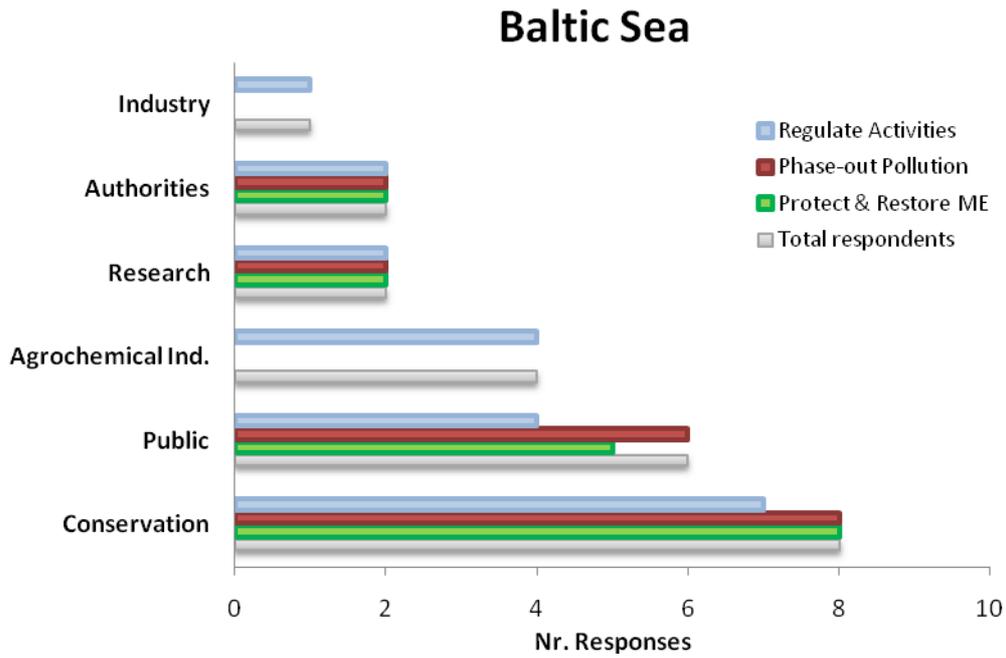


Fig. V – High priority given as response to the rating of the 3 general objectives of the MSFD (to regulate activities that may have impact on the marine environment; to phase-out pollution and protect and restore marine ecosystems) by each stakeholder group.

MSFD Consultation: Issues - Baltic Sea

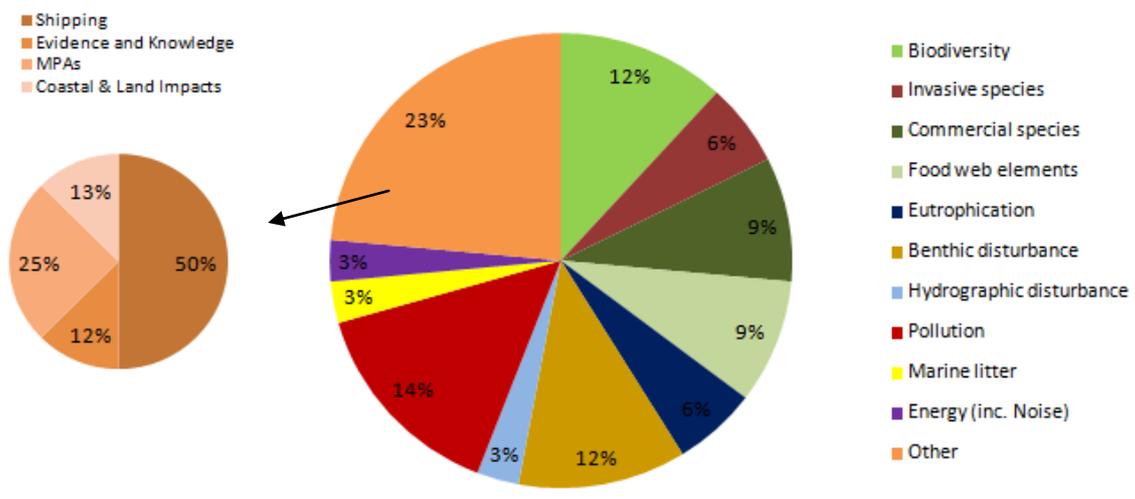


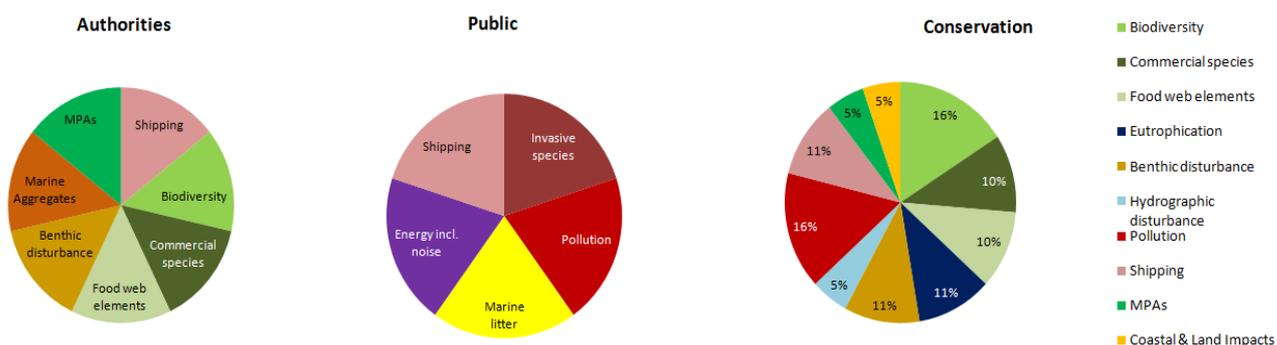
Fig. VI – Occurrence of issues identified by all participants from countries bordering the Baltic Sea.

Pollution in general and the impacts of shipping represent the 2 issues most often referred to, and together with benthic disturbance, commercial species of fish, biodiversity and the need to consider the full range of the marine ecosystems comprise over 65% of the concerns highlighted. Issues related to eutrophication were only mentioned by respondents from this region. The risk of introduction of alien species seems to be of concern, in particular associated to their use in marine aquaculture. In relation to other issues and the other regional seas, both the problem of pollution and the need to consider all the elements of the ecosystem seem to have a higher weight for respondents from the Baltic region.

Issues in relation to Stakeholders groups

Fig. VII illustrates the issues identified by the main contributors from this region.

The impact of shipping is the only issue that is mentioned by all 3 sectors. Benthic disturbance is pointed out by both Authorities (sand and gravel exploitation) and Conservation (protection of deep-sea ecosystems and impact of bottom-trawling). Surprisingly, the Research sector had a minor contribution and only referred to the need to support better knowledge of the marine environment.



1.1 Fig. VII – Occurrence of issues mentioned by different stakeholder groups from EU countries bordering the Baltic Sea.

MEDITERRANEAN

Fig. VIII shows *High* priority given as a response to the rating of the 3 general objectives of the MSFD by respondents from the Mediterranean region.

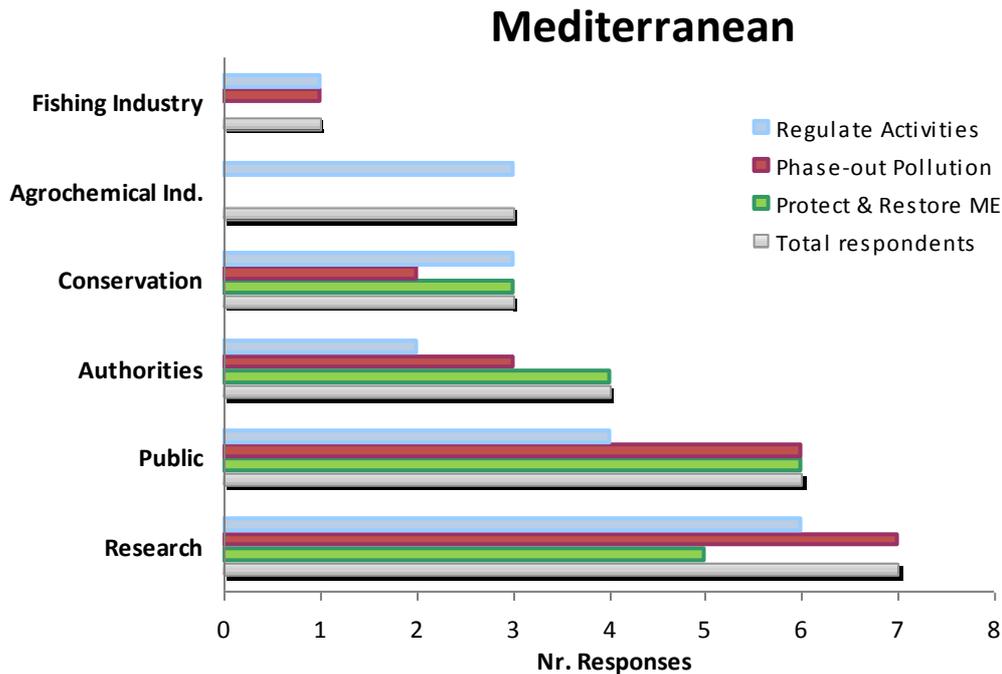


Fig. VIII – High priority given as response to the rating of the 3 general objectives of the MSFD (to regulate activities that may have impact on the marine environment; to phase-out pollution and protect and restore marine ecosystems) by each stakeholder group.

Additional issues identified

Compared with the Baltic responses, which had a very similar level of participation, the number of issues referred to by respondents from the Mediterranean area is considerably lower (Fig. IX).

Over half of the concerns expressed are related to biodiversity and commercial species, the need to consider the full range of the ecosystem, including the land elements, and pollution in general. However, one of the main issues identified, but in a broader sense, has to do with coastal development and impact of land activities on the marine environment.

MSFD Consultation: Issues - Mediterranean

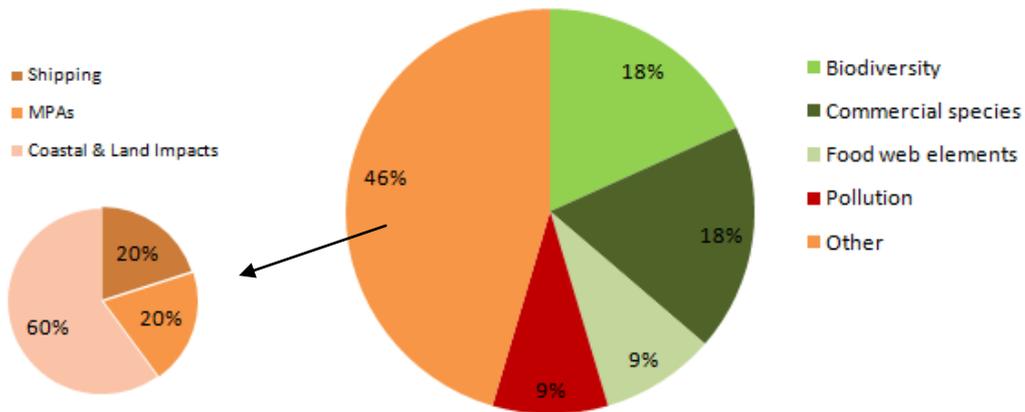


Fig. IX – Occurrence of issues identified by all participants from Mediterranean countries.

Issues in relation to Stakeholders groups

The only stakeholders that pointed specific issues were Conservationists, Researchers and the Public. Surprisingly, the Public and Research stakeholders referred to biodiversity and the status of commercial species, while the Conservation sector specified aspects related to shipping and coastal development (Fig. X).

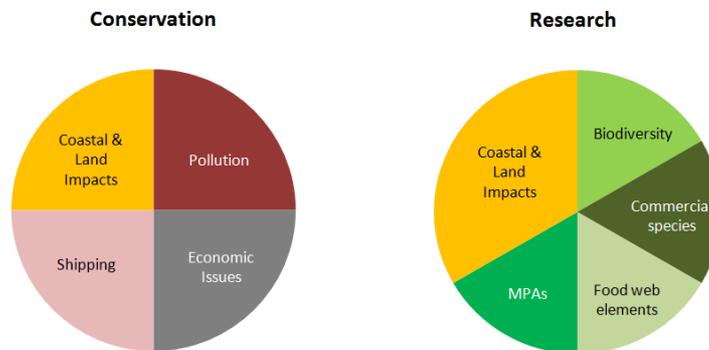


Fig. X – Occurrence of issues mentioned by different stakeholder groups from EU countries bordering the Mediterranean.